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R. Craig Sineath, Jr. Date

Considerations for Online Recruitment of Men Who Have Sex with Men living in Geographical Areas Not Included in the NHBS

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Global Epidemiology

_____ [Chair's signature]

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Considerations for Online Recruitment of Men Who Have Sex with Men living in Geographical Areas Not Included in the NHBS

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2008

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An abstract of

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Abstract

Considerations for Online Recruitment of Men Who Have Sex with Men living in Geographical Areas Not Included in the NHBS

By: R. Craig Sineath, Jr.

Background: Recently, surveillance of the HIV epidemic in the U.S. has expanded. The current behavioral surveillance system uses venue-based sampling methodology and is only inclusive of certain metropolitan statistical areas. With the expansion of web-based research, MSM may be more accessible for inclusion in surveillance systems.

Objective: This study aims to evaluate the feasibility, usefulness, and cost effectiveness of recruiting men online from states where data are not collected as part of the National HIV Behavioral Surveillance System (NHBS) and determine if special strategies are needed to reach rural MSM.

Methods: Data on HIV risk behaviors, testing history, and use of prevention services were collected through an online survey targeted towards MSM over 18 years of age in three states not included in the NHBS (Iowa, Minnesota, and South Carolina). Participant characteristics were modeled with three outcomes (unprotected anal intercourse (UAI) with most recent male sex partner, disclosure male-male sex to a provider, and having an HIV test in the past year) using logistic regression. Cost per completed interview was compared to cost for general US surveys of MSM; usefulness will be evaluated with a 6-month follow-up evaluation with participating health departments.

Results: A total of 516 men completed the survey. 206 (47%) were from rural areas. Rural men had decreased odds of disclosing male-male sex to their provider (aOR=0.37). Those who disclosed having sex with men to their provider had increased odds of ever testing for HIV (aOR=3.06) and receiving a hepatitis C test in the past year (aOR=4.05). 73% of rural MSM and 65% of urban MSM engaged in UAI in the past year. 89% of participants (n=403) were white, non-Hispanic. The average cost per completed survey was $10.82 overall and was highest ($16.25) in South Carolina.

Discussion: Rural MSM engaged in high-risk behavior and were less likely to discuss their sexual behaviors with a provider. These disparities demonstrate the need to include these areas in national surveillance systems to monitor trends in behavior and assess prevention efforts. The high cost of recruiting MSM from these areas demonstrates the need for developing and evaluating new online recruitment methodology.

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INTRODUCTION

This study was designed to determine the feasibility of using online collection of behavioral data to fill a gap in the understanding of HIV-related behaviors among men who have sex with men (MSM). Most US states are not funded to collect HIV behavioral surveillance data through federally-implemented HIV behavioral surveillance systems, and behavioral surveillance data are generally not available in these states. Despite the heavy impact of the US HIV epidemic in MSM (1) and signs of increasing incidence of HIV in this group (2, 3), there currently is no national annual surveillance of HIV behavioral data among MSM in the United States.

With the expansion of high-speed internet access and of internet-based health research in recent years, online methods of data collection could be utilized to reach populations that were once considered hard to reach, including MSM who do not attend traditional gay venues, and MSM in rural areas. In general, there are many barriers to recruiting certain subgroups of MSM, and this study aims to evaluate the feasibility and cost effectiveness of online sampling of men from states where data are not collected as part of the National HIV Behavioral Surveillance System (NHBS). We also sought to determine if special recruitment strategies are required to reach rural MSM by describing a sample of men recruited online through traditional banner advertisement recruitment in states with large rural populations.

BACKGROUND

Since the discovery of the virus in 1981, HIV has disproportionately affected MSM (1). From 2001 to 2004, 157,252 cases of HIV were reported to the CDC with 71% of infections occurring in men and 61% of these male infections attributed to male-to-male sexual contact (4). The HIV epidemic continues to grow in the MSM population. Through an extended back-calculation model, Hall et al suggested that the incidence of HIV in MSM was at its lowest in the early 1990's and has increased since (2). In an analysis done in eight countries, including the United States, HIV notification rates for MSM decreased from 1996 to 2000, however, from 2000 to 2005, notification rates increased 3.3% per year (3). In the United States, HIV diagnoses in MSM increased 8% from 2003 to 2004 (4). In 2009, 57% of diagnosed infections were attributed to male-to-male sexual contact and the annual number of diagnosed HIV infections of MSM increased from 2006 to 2009 (5).

Efforts to monitor HIV infections in the United States have improved in recent years, including expansion of surveillance activities to include HIV incidence surveillance (2), HIV behavioral surveillance (6), and HIV clinical outcomes surveillance (7). It has been a high priority to establish a system that uses standardized methods of data collection in order to monitor trends in the epidemic, including trends around specific risk factors (8).

Behavioral surveillance is "the systematic and ongoing collection of data about risk and health related behaviors with the purpose of correlating trends in behaviors with changes in disease over time" (9). In 2004, Centers for Disease Control and Prevention (CDC) released a report evaluating the supplemental surveillance needs of states that

have a low to moderate HIV prevalence. 86% of states surveyed rated behavioral surveillance as their first or second priority need with respect to supplemental surveillance; risk behaviors, use of prevention services, and HIV testing history were the top three priorities of behavioral data needs for people not infected with HIV (10). It is important to evaluate prevalence of certain behaviors within MSM populations to evaluate current prevention efforts and determine novel methods to prevent HIV infection. Currently, there is no cure for HIV and primary prevention is the only way to reduce infection rates (11). Data are needed to ensure the proper prevention methods are being utilized and developed.

To meet the behavioral surveillance data needs of the health departments in large and heavily impacted US cities, the CDC developed the National HIV Behavioral Surveillance System (NHBS). This system collects data on key behavioral risk indicators of three high-risk groups (men who have sex with men, injecting drug users, and high-risk heterosexuals) in rotating 12-month cycles in 21 most heavily impacted metropolitan statistical areas (MSA) in the United States, and the information collected can be used to detect shortcomings in current prevention services and develop new prevention services to lower the incidence of HIV in the population (6).

With the stigma surrounding homosexuality in the United States, MSM are population is considered hard-to-reach population. Venue-based time-space sampling is currently used to recruit MSM to the NHBS in the United States. This sampling approach requires many resources such as hiring and retaining staff, community support, and ongoing formative research to develop appropriate venue-lists for each MSA (12). This methodology is done to reach MSM in venues where large groups are known to

congregate and socialize. However, some subgroups of MSM, are not reached using this methodology, including MSM who are not as open about their homosexuality and who live in areas where they are not many gay-friendly venues.

Rural MSM are included in this more difficult to reach sub-population of MSM. They are often geographically isolated from mainstream gay culture and usually do not have gay-identified meeting places like their urban counterparts (13). Since most prevention work and research currently utilizes community-based organization or gay venues for outreach and research purposes, and there are not many places to safely recruit this subpopulation of MSM for in-person interviews, not much is known about access to prevention services of risk in rural populations. The characteristics of rural populations that are neglected in the current surveillance system differ from urban populations. In rural areas, there are barriers to access to testing and HIV care, drug treatment, and mental health counseling due to "geographic isolation, poverty, unemployment, lack of education, lack of childcare services, and attitudinal and cultural factors" (14). The majority of new HIV cases in non-metropolitan areas are due to male-to-male sexual contact (15). Given the geographic isolation and social stigma of MSM from rural areas, there are difficulties in targeting this population for research and prevention services. This knowledge gap is important because when compared to larger MSAs, the relative rate of AIDS diagnoses in rural areas is increasing (16). This is a direct correlation of prevention and treatment efforts being targeted towards urban communities while leaving the rural communities without as much access to information or resources.

The current behavioral surveillance system is only implemented in large MSAs; however, there has been some work done in smaller to moderate-sized cities. From 1998 to 2002, the CDC supported local health departments to administer HIV Testing Surveys (HITS) in Florida, Illinois, Michigan, New Jersey, and Washington and other cities around the country, to collect risk behavior data using in person interviews and recruitment through various venues for the three high-risk groups: MSM, high risk heterosexuals, and injection drug users (17). This program provided information for enhancing planning of and direct ongoing and new prevention services (17). In 2004, seven small to moderate-sized cities in the United States administered 10-minute in-person interviews at Gay Pride events to collect data for designing, targeting, and evaluating local HIV prevention programs; the CDC recommended that these techniques be expanded to additional geographic areas in subsequent years (18). These programs have provided useful data for the areas not currently included in the NHBS system; however, the data collections are not systematic or ongoing. It is important to have more frequent and comparable data that is more inclusive of the entire country to monitor trends.

In general, there is a higher prevalence of homophobic feelings in rural areas, and it has been shown that MSM from less tolerant communities report more sexual sensation seeking, leading to higher risk behavior; this suggest that MSM may use risky behavior as a means of dealing with the stress of living in prejudiced communities (19). It has also been found that rural MSM experience negative attitudes against them at treatment venues from healthcare providers (20).

With increasing use of the Internet in recent years, traditionally hard-to-reach populations are more accessible and this may provide a better means of reaching these populations for research and behavioral surveillance purposes. According to a survey done by the U.S. Census Bureau in 2009, 73.5% of all individuals live in a household with access to internet, and 85.1% of persons under 55 years old live in households with access to internet (21). Commonly referred to as the digital divide, black Americans have lower access to private high-speed internet (22). Because of the geographic dispersal and isolation of rural populations, there is often times not great access to high-speed internet in these areas; however, in 2008, the Obama administration's Blueprint for Change stated that high speed internet access will be expanded to rural areas during his presidency (23). This will expand the possibilities of reaching this population for prevention, surveillance, and research purposes.

The Internet is a way for people to maintain anonymity in communicating with others. This makes it likely for the internet to disproportionately attract people who would be disadvantaged or stigmatized if their sexual interests become known (24). For this reason, many MSM congregate to the Internet to meet others like themselves. The use of the Internet to meet others has evolved into people using it to meet sex partners online. An increase in syphilis infections in gay mean in urban areas in the United States and in Europe has been associated with meeting sex partners online (25). It has also been shown MSM who meet sex partners online are more likely to engage in unprotected anal intercourse which is the most effective way to transmit HIV sexually (26).

Behavioral research can leverage the fact that the majority of the population, including MSM, uses the Internet regularly; this offers a means to reach the many hard-

to-reach subpopulations of MSM, including rural and minority MSM. One study suggests "MSM in rural areas who are more geographically isolated and possibly more closeted not only have access to the Internet but are utilizing it regularly" (27).

Internet research has many advantages to traditional face-to-face research, and many studies have been done comparing traditional recruiting strategies and online recruiting. It has been shown that Internet studies may reach MSM at high risk for HIV who are not usually sampled with traditional venue-based methods (28). Using the internet is an effective means for recruiting rural MSM, and the use of incentives improves retention of this population in surveys (29). MSM recruited from online studies are more likely to be younger, and more likely to report STD and HIV infection, anal intercourse, and unprotected anal intercourse when compared to a traditional venue-recruited sample (30, 31). Research done using the Internet can collect a large amount of data in very little time because web-based data collection methods eliminate the use of postal services and making appointments for face-to-face interviews for survey distribution (32).

There are also limitations to online survey methods. For example, participants may be highly selected, and selection bias may influence the conclusions of such surveys. On the other hand, self-selected participants have been shown to have higher completion rates (33). Banner advertisement recruitment to surveys is more passive than traditional venue-based recruitment methods and participation may not be appealing to certain groups of MSM, particularly those who engage in higher risk behavior (34). There is also the likelihood of very motivated participants to try and take the survey more than

once. Not giving incentives for surveys or collecting IP address to de-duplicate the data are a good ways to protect against multiple survey submissions by one participant (35).

Although online methods are not perfect and should not completely replace traditional methods of research, the internet can provide a sample that is equally as valid and diverse as many methods currently used in scientific research (36). Internet-recruitment methods allow for collection of a sample of participants with great geographical spread in very little time when compared to traditional recruitment approaches. Recruiting via online methods also allows for inclusion of a segment of the MSM population that may be missed by other venue-based approaches. The internet also provides a great means in delivering prevention information and education, especially towards vulnerable populations such as adolescents (35) and harder to reach population (37).

METHODS

Study Design

The study was a pilot to demonstrate the feasibility and cost-effectiveness of using online data collection to gather HIV behavioral surveillance data from MSM in the US states not supported to collect behavioral surveillance data through the NHBS system. Data on HIV risk behaviors, testing history, and use of prevention services were collected through a cross-sectional online survey targeted towards MSM living in three states not included in the NHBS. Iowa, Minnesota, and South Carolina were chosen as areas of interest for this pilot study based on previous relationships with the HIV/AIDS surveillance coordinators and the local health departments. These states were also prioritized for inclusion based on their relatively large rural populations. The percentage of the populations for each state living in rural areas in each state is 38.9%, 29.1%, and 39.5% respectively (38). . For the purposes of this project, a rural area was defined by a population density of 1,000 people per square mile or less.

Another aspect of the study was to determine the extent to which data collected from an online HIV behavioral surveillance approach would be useful for local HIV community planning efforts. Therefore, upon completion of the survey cycle, each state will receive an anonymized dataset, a written behavioral surveillance report, and a slide set for use in evaluating the prevention services they have recently offered and determining what changes may need to be made to improve the effectiveness of their prevention services. A six-month follow-up interview will be done with each surveillance coordinator to observe how the data were actually used by the health

departments. The Emory University Institutional Review Board approved the study (Appendix D).

Recruitment of Participants

To recruit MSM into the study, banner advertisements linked to the survey URL were placed on Facebook and on websites which were part of a commercial advertising service targeting gay and bisexual men (the Gay Ad Network). The advertisements had state-specific messaging and branding to urge men to take the men's health survey to help their community and fight the HIV epidemic (see Appendix G). This was done to appeal to the altruism of the men and improve click-through rates. Incentives were not provided to participants for this study.

MSM were geographically targeted in the three states used for the study. Men who indicated they were interested in men or who had characteristics from a predefined list on their profile page were shown advertisements for the survey while logged into Facebook. Assuming that most people accessing the gay-oriented websites are MSM, only geotargetting was used to target men through Gay Ad Network (i.e., there were not additional selection criteria developed to determine to whom the advertisements were displayed). Recruitment ran from November 11, 2010 to November 27, 2010 on Facebook for Iowa only and from February 9, 2011 to March 23, 2011 in all three states on both Gay Ad Network and Facebook.

Study Population: Screening and Consent

When men clicked on the banner advertisement, they were led to a screening and eligibility page. Men who reported being over 18 years of age and had sex with at least one man in the past 12 months were eligible for the survey. Participants not meeting these criteria were led to the end of the survey and thanked for their time. Eligible participants were then shown a consent form online; those who consented to participation were enrolled into the study and began the survey. Zip code and IP address were the only identifying information collected in the study. Zip code was collected from participants to determine whether they lived in rural or urban areas, and IP address was collected to de-duplicate the data.

Survey Instrument

The core survey instrument was adapted from a subset of questions used for the CDC NHBS system (39). This portion of the survey was developed to collect data on demographics, risk behaviors, HIV testing history, and use of prevention services. In addition to these core questions, questions about local prevention needs and programs were developed in the following way. The HIV surveillance coordinators from the state health departments in Iowa, South Carolina, and Minnesota were contacted, provided information on the proposed study, and asked to provide a set of questions that could be placed in the survey to provide data to evaluate and guide their local prevention efforts. Each surveillance coordinator then met with their prevention staff to develop questions and provided them to Emory University for inclusion in the questionnaire. The core survey and supplemental questions provided by each individual state were programmed

into Survey Gizmo version 3.0. The survey instrument including questions provided by each state can be seen in Appendix A. We estimated the survey to take 16 minutes to complete. Upon completion of the survey, participants were thanked for their time.

Statistical Analysis

Feasibility of using online recruitment: process measures

To evaluate the feasibility and cost-effectiveness of this pilot study, we used statistics on banner advertisement impressions (or the number of times the ad was shown), click-through rates, time to accrue the sample, and cost per completed survey. These data were compared to other studies of national scope done at Emory University to assess whether recruiting participants in these geographical areas was any different than recruitment for other studies. Comparisons of cost and proportion of complete surveys per click were used as proxies to evaluate the relative effectiveness and feasibility of using online methods for recruiting men from these locations. Time to accrue was also considered, however, since all studies were recruiting from very different size target populations and MSM are not enumerated by the Census, there was no way of calculating a denominator for each study for comparison.

Part I – Modeling of Outcomes

For purposes of modeling outcomes, all three datasets were concatenated into one aggregate dataset. Three outcome variables were used to represent typical indicators in the realms of HIV behavioral surveillance: UAI with most recent male sex partner, HIV testing (testing in the past 12 months), and use of prevention services (having discussed having male sex partners with a health care provider in the past 12 months). In each case,

the modeling procedure was similar. Possible independent variables were chosen based on previously reported association in the literature.

Univariate analysis for continuous variables included assessing the normality and using logit plots to evaluate the odds relationship between the predictor variables and each outcome variable for linearity across all levels of the predictor. Continuous variables collected in this study included age, number of male sexual partners, number of female sex partners, number of days spent in jail, number of main male partners, number of casual male partners, number of male sexual partners participants engaged in anal sex and unprotected anal intercourse with, and number of sexual partners met online. Of these variables, only age and number of male sexual partners were shown to be normal and had a somewhat linear trend in the logit plots for all three outcomes. These variables were included in models as continuous variables, and all others were used as categorical variables.

Univariate analysis for each variable was conducted to obtain crude odds ratios and respective confidence intervals with respect to the three outcomes considered. Regardless of individual significance with each outcome, all variables were considered for the multivariable logistic regression models. All data collected for the project were analyzed together in three models to predict whether participants (1) told their primary care physician (PCP) they had sex with men in the past 12 months; (2) had unprotected anal sex with their last main sex partner; and (3) tested for HIV in the past 12 months. Models were built through backwards elimination stepwise logistic regression using SAS version 9.2. A full model including all variables of interest was run in SAS, and the least significant variable was dropped until a significant model was found. Once all predictors

were statistically significant in the model, collinearity and interaction was assessed. Collinearity was assessed through using a collinearity macro (see Appendix B). Interaction was evaluated through placing all possible two-way interaction terms with the significant predictors into the model. If they were significant at an alpha of 0.05 then they were left in the model.

Part II – Analyses for State Prevention Efforts

Behavioral surveillance data are traditionally reported in a descriptive fashion and disseminated as surveillance reports. As part of the study, each state health departments will be provided with a tabular report of the data and with an anonymized dataset to conduct their own analyses for purposes of evaluating and developing prevention efforts. Identifiers such as IP address and zip code will be removed from the datasets before dissemination to the health departments. The format of the state report, and the analyses for each state report can be seen in Appendices C, D, and E. Demographic characteristics (race/ethnicity, age group, education, sexual identity, health insurance, and population density) were reported separately, and were used to stratify analyses of prevention outcomes (e.g., testing behavior, partner types and sexual behaviors, drug use, hepatitis vaccination, STD testing behavior, and access to prevention services). Six months after dissemination of data, each health department will be interviewed to determine how the data were used.

RESULTS

The impression, click-through, partial, completion, and cost data for each state are listed in Table 1.1. A total of 516 participants were recruited and completed the entire survey. The average cost per complete survey for this sample before data cleaning was $10.82, with the maximum state-specific cost per completed survey being $16.25 in South Carolina. The total number of participants in each dataset for Minnesota, South Carolina, and Iowa was 188, 106, and 222 respectively. A few participants from states not included in the geographically targeted areas (Illinois, Michigan, Nebraska, New York, and South Dakota) took the survey. It is unclear whether these people were actually in the states geotargetted and indicated that they are from a different state, now live in a different state and have one of our targeted states listed on their profiles, or if there was an error in geotargetting. For building models, these observations were left in the dataset; however, the reports and datasets provided to each state will only contain participants who indicated living in that particular state.

There were also a few observations that made it into the dataset that should not have because of issues with SurveyGizmo's skip patterns and page jumping. Four participants indicated an age of seventeen, eleven had no sex in the past year, five had only sex with women in the past year, one was missing data on sex partners in the past year, six had no male sex partners in the past year, and thirty-four participants indicated not consenting for the survey but still made it past the disqualification page. This generally happens when a participant first enters a response that meets eligibility criteria (e.g., age of 18 or more) and then, after passing the evaluation of eligibility criteria, uses a back page function and changes the original response. In any case, these data did not

meet the eligibility criteria and were deleted from the finalized dataset that was used for analysis. The final number of participants enrolled in the study was 455.

The mean age of participants was 33 years. 68% of the population reported unprotected anal intercourse with any male sex partner in the past 12 months. When this is broken down into main partners and casual partners, 63% of participants had unprotected anal intercourse with a casual partner in the past 12 months and 77% had unprotected intercourse with any main sex partner in the past 12 months. A crude estimate shows that MSM who engage in sexual acts under the influence of non-injection drugs have almost 2 times the odds of engaging in UAI in the past 12 months (Table 1.3; 95%CI: 1.1-3.2). About half of the men enrolled had tested for HIV in the past year, and 82% had tested for HIV before in their lifetime Sixteen percent of participants (n=59) indicated that they had tested positive for HIV on their last test.

Eighty-nine percent of the population was white, non-Hispanic. Based on 2000 census data, Iowa, Minnesota, and South Carolina's populations are 93%, 88%, and 67% white non-Hispanic respectively. South Carolina, indicating the highest minority population of the three states, had a sample that was 85% white. Forty-seven percent of the sample lived in an area with a population density less than or equal to 1,000 people per square mile.

Outcome 1: Unprotected Anal Intercourse

Seventy-three percent of participants (n=264) indicated that they had engaged in unprotected anal intercourse with their most recent male sex partner in the past 12 months. The analyses of this outcome variable can be found in Table 1.3. Crude

analyses comparing demographics, risk behaviors, and use of prevention services across UAI categories with last male sex partner in the past 12 months showed a statistically significant increased odds of UAI in participants identifying as homosexual and decreased odds of UAI in African Americans, participants that had sex with a female in the past 12 months, participants that had a hepatitis C test in the past 12 months, and participants that met sex partners online in the past 12 months.

Adjusted estimates using logistic regression demonstrate that MSM who had sex with at least one female in the past year, had a Hepatitis C test, having an individual-level HIV prevention intervention, and meeting male sex partners online had decreased odds of engaging in UAI with their last male sex partner in the past 12 months. There were no interactions in this model.

Outcome 2: Talking to primary care physician about homosexuality

Similarly to outcome 1, univariate analyses and backwards elimination step-wise logistic regression were done to assess the association of variables for demographics, risk behaviors, and use of prevention services to disclosing same-sex sexual behavior to a doctor, nurse, or other health care provider. The results from the crude analyses and adjusted estimates are shown in Table 2.4.

Sixty-one percent (n=232) of participants indicated that they disclosed their male sex partners to a health care provider in the 12 months before interview. Bivariate analyses showed that older age, having public health insurance, identifying as homosexual or gay, engaging in UAI with the most recent sex partner in the past 12 months, testing for HIV ever and in a lifetime, having an STD test in the past 12 months,

having an individual level prevention intervention, and higher numbers of times tested for HIV in the last year all were associated with increased odds of disclosing male-male sexual behavior to a health care professional. Not knowing/reporting health insurance type, having sex with a female in the past 12 months, and being from a rural area are all associated with decreased odds of disclosing same-sex sexual behavior to a health care provider. 72% of men from urban areas discussed having a male sex partner with their healthcare provider, while only 51% of rural men reported disclosing their sexuality to a healthcare provider in the past 12 months ($p<0.001$).

Adjusted estimates demonstrate that being older, having UAI with the most recent partner in the past 12 months, ever testing for HIV, and having a hepatitis C test are all associated with increased odds of disclosing same-sex sexual behavior to a healthcare professional., and being from a rural area has statistically significant lower odds of disclosing being MSM to a provider.

Outcome 3: Tested in the past year

Fifty-four percent (n=236) of participants reported testing for HIV in the past year. Crude analyses show that having and STD test (defined as a test for syphilis, gonorrhea, Chlamydia, or some other STD for this study) in the past 12 months; having ever had a hepatitis vaccine; having a hepatitis C test in the past 12 months; and having an individual conversation with an outreach worker, counselor, or prevention program worker about protection from HIV about HIV were all associated with higher odds of having an HIV test in the past 12 months.

The final multivariable logistic regression model for the outcome of testing for HIV in the past year contained two predictor variables: having an STD test in the past 12 months and having a hepatitis C test in the past 12 months. There was significant interaction between these two variables in the model, meaning that the effect of STD testing in the past year on HIV testing in the past year was different across the two strata of testing for hepatitis C in the past year. Among those not having a hepatitis C test in the past year, participants that tested for an STD (gonorrhea, Chlamydia, syphilis, or some other STD) were 9.3 times more likely to have had an HIV test in the past year. In the other group, those not testing for hepatitis C in the past year, there was only a 2.6 odds ratio for HIV testing in the past year in those testing for an STD versus participants that did not test for an STD in the past year. This latter odds ratio was not found to be statistically significant (95% CI: 1.0-7.1). The results for this analysis can be found in Table 1.5.

DISCUSSION

The main aims of this study were to evaluate the feasibility, cost-effectiveness, and usefulness of using online methods for recruiting a sample of men that are not included in the current National HIV Behavioral Surveillance system. According to our experiences, this method of recruitment in these areas is feasible; however, there are several barriers to overcome when attempting to recruit this subpopulation of MSM using online methods. Recruitment in these states was notably slower and much more expensive than for national surveys done online targeting MSM. Whether collection of these data is actually useful in public health practice has not yet been assessed; however, data from the combined analyses show that MSM from these states recruited online reported more evidence of risk and vulnerability than MSM recruited for the NHBS system. 68% of the sample from this study reported UAI with a male partner in the past 12 months, while the NHBS reported 43% of MSM having UAI with their male partners in the past 12 months (39). 77% of MSM interviewed for the NHBS indicated that they had tested for HIV in the past 12 months, and only 54 percent of the population from this study reported testing for HIV in the past 12 months (39). With this evidence of high risk behavior and limited access and use of services, it is important to include these areas in ongoing systematic behavioral data collection to guide efforts for expanding the reach of prevention services to this population.

The need for data in these regions was also expressed through personal communications with the HIV/AIDS surveillance coordinators of Iowa, South Carolina, and Minnesota. The need for behavioral data was also reflected in the results of a survey done by the CDC in 2004 assessing supplemental surveillance needs of states with low-to

moderate HIV/AIDS prevalence (10). This project was well received by health departments approached with the opportunity, and the surveillance coordinators showed great enthusiasm towards receiving data on MSM in their states to use in assessment of their prevention services. After receiving the reports and datasets, each coordinator will take part in a 6 month follow up interview to further evaluate the usefulness of the data and provide a better sense of the need for more inclusive behavioral surveillance data at the national level.

Analyses of Outcomes

The analyses of the data collected in this study describe MSM from areas not included in the NHBS system that utilize Facebook and Gay Ad Network websites. Areas not included in the current behavioral surveillance system generally do not have very large cities and the population densities are much lower when compared to states in which data are collected. The overall MSM population is considered hard-to-reach for data collection, and because MSM from these states are so geographically isolated and often times do not have safe places to congregate and socialize, they are considered even more difficult to target and recruit by traditional research methods. This population is often left neglected when it comes to data collection and prevention services.

The first of the analyses considered with these data included comparing UAI with a most recent sex partner in the past 12 months with various demographics, risk behaviors, and use of prevention and health services. These data show no statistically significant difference in risk behavior between rural and urban MSM; however, almost three-quarters of rural MSM from this sample engaged in UAI in the past year. This high

prevalence of risk behavior means there is the chance for HIV and other sexually transmitted infections to spread effectively throughout the population. As mentioned above, this number is much larger than the proportion of MSM reporting UAI in the past year in the NHBS data. Another study done in 12 cities using in-person interviews at Gay Pride events showed 21% of respondents to have engaged in any UAI in the past year (40). While there may be different biases in reporting between the two methodologies, this difference in UAI demonstrates that use of internet for data collection may reach a very high-risk population in the areas.

Adjusted estimates using logistic regression showed that men who met partners online, participated in individual-level HIV prevention interventions, had a hepatitis C test, or engaged in intercourse with a female in the past 12 months had lower odds of UAI with their most recent male sex partner. In a meta-analysis done comparing sex-seeking and sexual risk behaviors of MSM across several studies, men who met partners online were more likely to engage in UAI (41). This observation was not true for the sample collected in this study. Since this population was more geographically sparse, it is likely that men from these rural states are meeting men online more for social connection and support because there are often times no other venues for MSM to congregate in these areas.

The second outcome modeled in this analysis was disclosing male-male sex to a healthcare provider. Other studies done have shown that disclosing male-male sex to a healthcare provider has been shown to increase the likelihood of being offered an HIV test (42) and hepatitis vaccination (43). Being offered HIV testing by a healthcare professional increases the likelihood of MSM actually receiving HIV testing (44). This

was supported by the data in this study. The multivariable logistic regression model using a variable for disclosing male-male sex to a healthcare provider as an outcome showed that men who received an HIV test in their lifetime or a Hepatitis C test in the past year were more likely to have told a healthcare provider that they had sex with other men in the past 12 months. Older age and engaging in UAI with a last sex partner were also associated with higher odds of disclosure of male-male sex to a healthcare professional. The model also showed that MSM from rural areas were much less likely to disclose male-male sex to healthcare providers. This demonstrates the need for sensitivity training of healthcare professionals in rural areas to make providers more comfortable and accepting of discussing male-male sex with their patients. Without these conversations occurring within the healthcare setting between MSM and their providers, great opportunities for prevention and education about safe practices, reducing risk behavior, and providing the proper HIV and STD screening procedures are being missed. Developing a protocol for healthcare professionals to more easily discuss these issues with their patients would be a great way to improve testing of rural MSM and probably have an impact in reducing the burden of the HIV epidemic in rural areas.

The final outcome considered in this analysis was testing for HIV in the past year. There was significant interaction in this model between testing for an STD and testing for Hepatitis C in the past year. The association between testing for an STD and testing for HIV in the past year was different across the two strata of Hepatitis C testing. Receiving an STD test in the past year produced over 9 times the odds of also testing for HIV in the past year among those who did not test for Hepatitis C. This association was not as strong nor was it statistically significant in those who did test for Hepatitis C. The odds

ratio in this group for HIV testing of those who had an STD test in the past year compared to those who did not was only 2.5 (95%CI: 1.0-7.1). This demonstrates that HIV and STD testing are often linked in testing centers and doctors offices and do not necessarily include routine hepatitis C testing. Among those who tested for Hepatitis C, there was less of an association between STD testing and HIV testing in the past year. HIV and Hepatitis C are both blood-borne pathogens. The pathology of these two agents may explain that people at high risk for these blood-born pathogens, such as injection drug users, are being considered for HIV and hepatitis C tests but not STD test.

Challenges

The analyses of the data collected for this project indicate that MSM in states not included in the NHBS are at high risk for HIV and therefore it is important to collect data on these MSM and direct prevention services towards them. The NHBS system currently only collects data in certain MSAs around the United States, and the states not included in the federally funded NHBS generally have larger populations living in rural areas. While the self-reported HIV prevalence in the rural population of this study was 12.5% compared to the 19% prevalence in the urban population, the rural MSM showed equally high prevalence of UAI in the analyses mentioned above. High-risk behavior in this population gives the opportunity for transmission of HIV.

Rural MSM were also less likely to disclose their sexuality to healthcare providers, which is shown to increase the likelihood of testing for HIV and other sexually transmitted infections. It is likely that stigma associated with homosexual lifestyle and

behavior being less accepted leads to discrimination that transcends into barriers to prevention services and discussing sexual health with healthcare providers.

From conception of this project, it was known that MSM from states with high rural populations are much harder to reach than their urban counterparts. This is reflected in the cost of the project. Compared to other studies done at Emory University, the cost per completed survey for this study was very high. In nationwide survey done in the United States targeting MSM in a relationship, 34% of clicks resulted in a complete survey, and the average cost per complete survey was $0.72 (45). The data for this project show that about half the percentage of clicks resulted in completed surveys compared to this national project (18.1%). The cost for this study was substantially high when compared to the study above. The average cost per complete for this project was $10.82, and South Carolina had the highest cost per completed survey at $16.25. This is an over 15-fold increase in cost per completed survey for the overall project and over 22-fold increase in cost for a complete survey in South Carolina when compared to the previous study. These challenges are direct implications of the difficulty in reaching and recruiting this population and are indicative of the special care that must be taken to ensure that this subpopulation of MSM is included in the national surveillance system.

Rural populations are geographically isolated and because of this are often times left out of research and prevention efforts. Data are needed on MSM in these areas to assess current prevention strategies and develop new prevention methods for reaching this isolated population. The disparities in risk behaviors and access to prevention services between rural and urban populations demonstrate the need to include these areas

in national surveillance systems to provide systematic and ongoing data to monitor trends in risk behavior and assess and develop new prevention methods.

It is also important to mention that there was difficulty in recruiting minorities into the sample for this study. The overall sample was 89% white non-Hispanic. The samples collected from Iowa and Minnesota had proportions similar to their population statistics according to the 2000 Census (38). South Carolina, however, had a sample that was 85% white non-Hispanic. The actual population in South Carolina is about 67% white, non-Hispanic (38). In comparing these two statistics, the actual proportion of minorities in the South Carolina population is not reflected in the sample obtained for this study. This indicates the difficulty in recruiting minorities into online studies. Other studies have demonstrated this challenge as well. A study done using Myspace in 2009 showed that Hispanic and African American MSM had lower click-through rates than their white counterparts, and minority populations had higher attrition throughout the length of the survey (46).

It has been shown that black MSM have higher incidence of HIV in the United States (47). It is important to include such a vulnerable and disproportionately affected population in online research with MSM and the ongoing and systematic data collection that is done nationwide through federally funded surveillance systems to provide data to guide and develop prevention efforts and allocate resources appropriately for HIV care. More research needs to be done on minority use of technology, but it has been suggested that minorities may be accessible through mobile devices and smartphones and African Americans and Latinos use their phones more for mobile data applications compared to

whites (48). With the expansion of such technologies, there is a great opportunity to utilize these services for the purposes of data collection and prevention services.

As technology broadens its reach, recruitment of these harder to reach populations will become less of a challenge. The Obama administration has committed to improving access to high-speed Internet to rural areas in the United States (23), and as technology expands its reach, there will be new opportunities for reaching these MSM subpopulations. New methodology for collecting data in these populations should be considered and developed to overcome this challenge of reaching such a hidden population.

Using the Internet to collect behavioral data is a relatively new field of research and should be utilized in developing new methodologies for HIV behavioral surveillance. With technology quickly growing and changing, new methods of recruiting for surveys are emerging as well. Much success has been shown with using the Internet to recruit participants for research and providing prevention services. This methodology could be very fruitful for surveillance purposes as well. Currently behavioral surveillance data is only collected in MSM every three years by the NHBS system (6). There are gaps in the data that could be filled with a more frequent surveillance system. The expansion of this program to include the entirety of the United States in a yearly collection of data would give a much better picture of the diverse MSM population within the country.

Limitations

While online recruitment methods provide a means to quickly accrue a sample of MSM in an often cost-effective manner, this methodology is not without limitations. The

sample provided is a convenience sample and participants have been self selected for inclusion. Bias is introduced based on the fact that men that take the time to click on the banner advertisement and complete the survey may have very different characteristics than men who choose to not click on the banner advertisements and complete the survey. The data provided in the survey were also self-reported. There is no way to tell if the data provided are accurate and there is possible misclassification bias. Attrition rates for the survey were also very high. Table 1.1 shows the percentage of participants that only completed a partial survey.

Future directions

Despite its limitations, this methodology provides a quick and effective way of recruiting MSM with self-disclosed high-risk behavior. With technology quickly growing and changing, new methods of recruiting for surveys are emerging as well with the possibility of overcoming some of the limitations of online data collection.

Banner advertisements are the simplest and most common way of advertising surveys through social networking and sex-seeking websites. However, newer technologies are constantly being developed and becoming more common to grab the attention of Internet users and increase click-through rates and retention throughout the entirety of the survey. Response to banner advertisement has dramatically decreased in recent years (49) and there are new methods being developed to make advertisements more alluring to consumers. One study has shown that matching banner advertisements to the website to which consumers are led and making the content stand out through pop-ups, videos, or animations improves click-rates; however, these two methods are

mutually exclusive and when put together actually decrease response to advertisements, probably from overwhelming the consumer (50).

Rich media format banner advertisements are becoming more common. These types of advertisements increase the user's interaction with the advertisement. For instance, with rich media advertisements, a user can scroll over the advertisement and it can enlarge, show video, etc. Research has shown that using rich media advertisements can be productive in getting users to click, however, there are a few caveats. It has been found that rich media advertisements are most successful when they are at the forefront of the advertising campaign and make the first impression (51). Also, the user should not be required to interact with the advertisement to get the message; this decreases the success of the ad (51).

The extensive expansion of mobile devices in recent years also provides a great opportunity to reach people for data collection purposes. Currently, text messaging and smart phones are on the forefront of mobile technology providing a means to collect data from people at their fingertips while they are on the go. Research done using text messaging for primary care research has shown that the use of text messaging in collecting data shows no statistically significant difference in response rates when compared to internet studies and is cost-effective (52).

The use of smartphones that place internet access right in the palms of people's hands is dramatically increasing. According to Gartner technology researchers, sales of mobile devices increased 31.8% to 1.6 billion units sold, and smartphone sales increased almost 72.1% from 2009 to 2010 (53). With the internet so easily accessible on the go, this provides the opportunity to reach people for online data collection while they are

away from their computers. As mentioned earlier, using mobile technology may be a great way of overcoming the barrier to reaching minority populations.

Social networking sites, chat services, and forums (such as Craigslist) have revolutionized connections between people. They have become a means for MSM to meet other MSM and find support from people that share common characteristics and therefore should be considered a community resource (54). Recently there has been an explosive expansion of the use of social networking sites in the online community and development in new technologies within these contexts.

Given this new expansive use and technical development of social networking sites, respondent-driven sampling (RDS), developed to reach the hidden intravenous drug user population, may be able to take advantage of some of these new technologies for recruiting participants and may show great promise for reaching further into the MSM populations in online research. RDS involves restricting the number of peer referrals a person is allowed to give, and samples can then be weighted inversely based on the person's network size to ensure that certain more visible groups are not overrepresented in the sample (55). Online RDS was conducted through email in the past, and this method was limited due to the variable and intermittent use of email across the population (56). Recently, social networking sites have been expanding to include mobile applications and text message notification, which keeps social networking at user's fingertips constantly. One such networking site is Facebook which currently has over 500 million users (57). With recent advancements in these social networking sites, it is now possible to capture the number of friends a person has as a proxy for determining

network size. With this information now available through modern social networking sites, there are many more opportunities for RDS methodology in online research.

One other technology that has become recently popular is the use of viral marketing, a marketing strategy that encourages participants to pass information to others, cost-effectively improves brand advocacy and awareness (58). This method works through providing effortless transfer from person to person, exploits common motivations and behaviors, utilizes existing communication networks, and takes advantage of existing resources (59). Viral advertising has the potential to reach a large population of people and with the popularity of networking sites such as Facebook, Twitter, and 4square connecting people like never before, there is the possibility of quick and easy transfer of information from person to person.

Research has been done looking at what makes viral videos more likely to be passed on and actually become viral. It has been shown that a "pleasant emotional tone" associated with the advertisement it a predictor of the advertisement doing well and as emotional tones associated with the advertisements become more negative (including shock and fear), the worse the advertisement performs (60). People who are more likely to forward content have different characteristics than people who are less likely to forward content on the Internet. It has been shown that if a person is more individualistic and altruistic they are more likely to forward content on the web (61). This marketing research can be taken advantage of for recruitment efforts. It may be beneficial to place questions in surveys that are used to give some fun or pleasant feedback to the respondents. When considering peer referral, these types of incentives would make it

more likely for a person to pass the survey to their friends and urge them to take it, causing the survey to go "viral".

The Internet also provides a means to provide feedback or other incentives, not only to motivate participants to pass the survey off to their friends, but to also motivate participants to complete the surveys or be retained in the study. These can be anything from monetary incentives such as gift cards or media such as music or videos. A recent study has found that participant that choose to take part in the study because they are rewarded with donations that are placed in their name are more credible contributors to data collection (62). However, incentives to take a survey may increase the likelihood of someone taking the survey more than once so a balance must be found or there should be a way to de-duplicate the data (35).

Conclusion

While the data collected for this project indicate that recruiting MSM from these areas not included in the NHBS system has many challenges including high cost, long time to accrue the sample, and difficulty in recruiting rural and minority men, it is important to recognize that data collection in these populations is important from a public health perspective. The analyses of these data indicate that men in these areas that are left out of federally-funded surveillance systems are at high risk for HIV and do not have the same access to prevention services as their more urban counterparts.

As new technologies develop and expand their reach, new opportunities arise to reach these vulnerable and neglected populations for research and surveillance purposes. It is the responsibility of researchers and public health professionals to include these affected populations in research and development of prevention programs.

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TABLES

Section I: Modeling of Outcomes

Table 1.1: Impression, click, partial, and completion data for banner advertisements on Facebook and Gay Ad Network linked to a survey in Iowa, Minnesota, and South Carolina, 2010-2011

State	Impressions n*	Clicks n (%)*	Partial n (%)	Complete n (%)	Cost ($) Total (Average)**
Iowa	3,788,127	1412 (.037)	196 (13.8)	229 (16.2)	2171.23 (9.48)
Minnesota	1,883,416	802 (.043)	136 (17.0)	187 (23.3)	1754.65 (9.38)
South Carolina	1,375,472	667 (.048)	118 (17.7)	106 (15.9)	1722.54 (16.25)
Total	**7,047,015**	**2881 (.041)**	**450 (15.6)**	**522 (18.1)**	**5648.42 (10.82)**

**Average cost per complete survey

Table 1.2: Demographic and behavioral characteristics of 455 MSM recruited online through Facebook and Gay Ad Network in Iowa, Minnesota, and South Carolina, 2010-2011

Characteristic	No.	(%)
Age (in years); mean (SD)	33	12
Race/Ethnicity		
White, non-Hispanic	403	89
Black, non-Hispanic	12	3
Hispanic	14	3
Asian/Pacific Islander	8	2
Native American/Alaska Native	2	0.4
Multi-racial	12	3
Other	2	0.4
Education		
<High School	13	3
High School diploma or equivalent	79	17
> High School	361	80
Sexual Identity		
Homosexual or gay	403	89
Not homosexual or gay	50	11
Population Density		
>1000 per mi^2	232	53
<1000 per mi^2	206	47
Health Insurance		
Private	258	57
Public	65	14
None	89	20
Don't know	38	8
Sex with Female		
Yes	23	5
No	432	95
Ever tested for HIV		
Yes	370	83
No	78	17
Tested for HIV in the past 12 months		
Yes	236	54
No	204	46
STD test in the past 12 months*		
Yes	144	41
No	206	59

Table 1.2: Continued

Characteristic	No.	(%)
Hepatitis Vaccination		
Yes	268	66
No	137	34
Hepatitis C test		
Yes	135	32
No	288	68
Individual conversation about HIV		
Yes	88	20
No	362	80
Group conversation about HIV		
Yes	54	12
No	400	88
Went to Jail in the past 12 months		
Yes	32	7
No	416	93
Used non-injection drugs in the past year		
Yes	137	31
No	311	69
Sex under influence of NID in the past year		
Yes	90	20
No	358	80
Met MSP online		
Yes	264	59
No	183	41
Number of times tested in the past 12 months; mean (SD)	1.9	2.4
Number of male sexual partners in the past 12 months; mean (SD)	9	21

*STD test was worded in the survey as "syphilis, gonorrhea, or chlamydia or other STD"

Table 1.3: Associations between demographic and behavioral factors and unprotected anal intercourse (UAI) with most recent sex partner in the past 12 months among 455 MSM recruited online in Iowa, Minnesota, and South Carolina, 2010-2011

Variables	UAI with most recent sex partner n (%)	No UAI with most recent sex partner n (%)	Crude Odds Ratio	95% CI	Adjusted Odds Ratio	95% CI
Age (in years); mean (SD)	32 (11.67)	32 (11.08)	1.0	1.0 - 1.0	**N.S.**	
Race/Ethnicity						
White, non-Hispanic	239 (74)	83 (26)	1.0	-	N.S.	
Black, non-Hispanic	2 (33)	4 (67)	**0.2**	**0.03-1.0***		
Hispanic	9 (82)	2 (18)	1.6	0.3-7.4		
Asian/Pacific Islander	4 (67)	2 (33)	0.7	0.1-3.9		
Native American/Alaska Native	1 (50)	1 (50)	0.4	0.02-5.6		
Multi-racial	7 (70)	3 (30)	0.8	0.2-3.2		
Other	1 (100)	0 (0)	N.A.	N.A		
Education						
<High School	7 (70)	3 (30)	0.9	0.2-3.5	**N.S.**	
High School diploma or equivalent	45 (79)	12 (21)	1.4	0.7-2.8		
> High School	212 (73)	80 (27)	1.0	-		
Sexual Identity						
Homosexual or gay	245 (76)	78 (24)	2.8	1.4-5.7	**N.S.**	
Not homosexual or gay	19 (53)	17 (47)	1.0	-		

Table 1.3: Continued

Variables	UAI with most recent sex partner n (%)	No UAI with most recent sex partner n (%)	Crude Odds Ratio	95% CI	Adjusted Odds Ratio	95% CI
Population Density						
>1000 per mi^2	129 (70)	56 (30)	1.0	-	**N.S.**	
<1000 per mi^2	126 (77)	37 (23)	1.5	0.9 - 2.4		
Health Insurance						
Private	149 (73)	56 (27)	1.0	-	**N.S.**	
Public	32 (68)	15 (32)	0.8	0.4-1.6		
None	60 (78)	17 (22)	1.3	0.7-2.5		
Don't know	20 (74)	7 (26)	1.1	0.4-2.7		
Sex with Female						
Yes	7 (47)	8 (53)	**0.3**	**0.1-0.8**	**0.3**	**0.1-0.8**
No	257 (75)	87 (25)	1.0	-	**1**	**-**
Ever tested for HIV						
Yes	229 (74)	79 (26)	1.4	0.7-2.7	**N.S.**	
No	33 (67)	16 (33)	1.0	-		
Tested for HIV in the past 12 months						
Yes	143 (72)	56 (28)	1.2	0.8-1.8	**N.S.**	
No	114 (76)	37 (25)	1.0	-		

Table 1.3: Continued

Variables	UAI with most recent sex partner n (%)	No UAI with most recent sex partner n (%)	Crude Odds Ratio	95% CI	Adjusted Odds Ratio	95% CI
STD test in the past 12 months						
Yes	86 (71)	35 (29)	0.9	0.5-1.5	**N.S.**	
No	114 (73)	42 (27)	1.0	-		
Hepatitis Vaccination						
Yes	155 (70)	68 (30)	0.6	0.3-1.0	**N.S.**	
No	86 (80)	22 (20)	1.0	-		
Hepatitis C test						
Yes	72 (64)	40 (36)	**0.6**	**0.3-0.9**	**0.5**	**0.3-0.9**
No	172 (76)	53 (24)	1.0	-	**1**	
Individual conversation about HIV						
Yes	44 (61)	28 (39)	**0.5**	**0.3- 0.8**	**0.4**	**0.3-0.8**
No	218 (77)	65 (23)	1.0	-	**1**	
Group conversation about HIV						
Yes	23 (64)	13 (36)	0.6	0.3-1.2	**N.S.**	
No	241 (75)	82 (25)	1.0	-		
Wen to Jail in the past 12 months						
Yes	18 (75)	6 (25)	1.1	0.4-2.8	**N.S.**	
No	245 (74)	88 (26)	1.0	-		

Table 1.3: Continued

Variables	UAI with most recent sex partner n (%)	No UAI with most recent sex partner n (%)	Crude Odds Ratio	95% CI	Adjusted Odds Ratio	95% CI
Used non-injection drugs in the past year						
Yes	82 (73)	30 (27)	1.0	0.6-1.6	**N.S.**	
No	181 (74)	64 (26)	1.0	-		
Sex under influence of NID in the past year						
Yes	59 (78)	17 (22)	1.3	0.7-2.4	**N.S.**	
No	204 (73)	77 (27)	1.0	-		
Met MSP online						
Yes	143 (68)	66 (32)	**0.5**	**0.3-0.9**	**0.5**	**0.3-0.9**
No	115 (80)	28 (20)	1.0	-	1.0	-
Number of times tested in the past 12 months; mean (SD)	2 (2.57)	2 (2.26)	1.0	0.9-1.1	**N.S.**	
Number of male sexual partners in the past 12 months; mean (SD)	10 (25.32)	7 (8.87)	1.0	1.0 - 1.0	**N.S.**	

*Confidence intervals did not include the null value before rounding.

Table 1.4: Associations between demographic and behavioral factors and disclosing male-male sex to a healthcare provider in the past 12 months among 455 MSM recruited online in Iowa, Minnesota, and South Carolina, 2010-2011

Variables	Told PCP about being MSM n (%)	Did not tell PCP about being MSM n (%)	Crude Odds Ratio	95% CI	Adjusted Odds Ratio	95% CI
Age (in years); mean (SD)	36 (12.37)	30 (11.98)	**1.0**	**1.0–1.1***	**1.0**	**1.0-1.1***
Race/Ethnicity						
White, non-Hispanic	205 (61)	129 (39)	1.0	-		
Black, non-Hispanic	7 (64)	4 (36)	1.1	0.3-3.8	N.S.	
Hispanic	7 (64)	4 (36)	1.1	0.3-3.8		
Asian/Pacific Islander	2 (40)	2 (60)	0.4	0.07-2.6		
Native American/Alaska Native	1 (50)	1 (50)	0.6	0.04-10.2		
Multi-racial	8 (80)	2 (20)	2.5	0.5-12.0		
Other	2 (100)	0 (0)	N.A			
Education						
<High School	3 (33)	6 (67)	0.3	0.1-1.2	**N.S.**	
High School diploma or equivalent	31 (57)	23 (43)	0.8	0.4-1.4		
> High School	197 (63)	114 (37)	1.0	-		
Sexual Identity						
Homosexual or gay	216 (64)	119 (36)	**2.9**	**1.5-5.8**	**N.S.**	
Not homosexual or gay	15 (38)	24 (62)	1.0	-		

Table 1.4: Continued

Variables	Told PCP about being MSM n (%)	Did not tell PCP about being MSM n (%)	Crude Odds Ratio	95% CI	Adjusted Odds Ratio	95% CI
Population Density						
>1000 per mi^2	143 (72)	56 (28)	1.0	-	**1.0**	-
<1000 per mi^2	82 (51)	80 (49)	**0.4**	**0.3–0.6**	**0.4**	**0.2-0.6**
Health Insurance						
Private	141 (62)	87 (38)	1.0	-		
Public	44 (77)	13 (23)	**2.1**	**1.1–4.1**	**N.S.**	
None	35 (57)	26 (43)	0.8	0.5–1.5		
Don't know	10 (38)	16 (62)	**0.4**	**0.2-0.9**		
UAI with MSP in past 12 months						
Yes	166 (66)	86 (34)	**1.6**	**1.0-2.5***	**2.2**	**1.2-3.8**
No	65 (55)	54 (45)	**1.0**		**1.0**	-
Sex with Female						
Yes	6 (35)	11 (65)	**0.3**	**0.1-0.9**	**N.S.**	
No	226 (63)	132 (37)	1.0	-		
Ever tested for HIV						
Yes	219 (69)	99 (31)	**7.9**	**4.0-15.7**	**3.1**	**1.3-7.0**
No	12 (22)	43 (78)	1.0	-	**1.0**	-

Table 1.4: Continued

Variables	Told PCP about being MSM n (%)	Did not tell PCP about being MSM n (%)	Crude Odds Ratio	95% CI	Adjusted Odds Ratio	95% CI
Tested for HIV in the past 12 months						
Yes	151 (71)	63 (29)	**2.4**	**1.6-3.7**	**N.S.**	
No	78 (50)	78 (50)	1.0	-		
STD test in the past 12 months						
Yes	108 (80)	27 (20)	**2.2**	**1.4-3.6**	**N.S.**	
No	81 (50)	82 (50)	1.0	-		
Hepatitis Vaccination						
Yes	158 (67)	77 (33)	1.0	0.9-1.1	**N.S.**	
No	55 (51)	53 (49)	1.0	-		
Hepatitis C test						
Yes	102 (82)	22 (18)	1.1	1.0-1.2	**4.0**	**2.2-7.5**
No	116 (51)	110 (49)	1.0	-	**1.0**	**-**
Individual conversation about HIV						
Yes	60 (77)	18 (23)	**2.4**	**1.4-4.3**	**N.S.**	
No	170 (58)	124 (42)	1.0	-		
Group conversation about HIV						
Yes	28 (65)	15 (35)	1.2	0.6-2.3	**N.S.**	
No	204 (61)	128 (39)	1.0	-		
Number of times tested in the past 12 months; mean (SD)	2.42 (2.29)	1.50 (2.66)	**1.2**	**1.1-1.4**	**N.S.**	

Table 1.4: Continued

Variables	Told PCP about being MSM n (%)	Did not tell PCP about being MSM n (%)	Crude Odds Ratio	95% CI	Adjusted Odds Ratio	95% CI
Went to Jail in the past 12 months						
Yes	15 (71)	6 (29)	1.6	0.6-4.4	**N.S.**	
No	216 (61)	137 (39)	1.0	-		
Used non-injection drugs in the past year						
Yes	73 (63)	42 (37)	1.2	0.8-1.9	**N.S.**	
No	158 (61)	101 (39)	1.0	-		
Sex under influence of non-injection drugs in the past year						
Yes	49 (65)	26 (35)	1.3	0.8-2.2	**N.S.**	
No	182 (94)	117 (39)	1.0	-		
Met MSP online						
Yes	145 (65)	78 (35)	1.5	1.0-2.1	**N.S.**	
No	84 (57)	63 (43)	1.0	-		

*Confidence intervals did not include the null value before rounding.

Table 1.5: Associations between demographic and behavioral factors and having an HIV test in the past 12 months among 455 MSM recruited online in Iowa, Minnesota, and South Carolina, 2010-2011

Characteristic	Had an HIV test in past year n (%)	Did not have an HIV test in the past year n (%)	Crude Odds Ratio	95% CI	Adjusted Odds Ratio**	95% CI**
Age (in years); mean (SD)	33 (12.31)	33 (12.64)	1.0	1.0-1.0	N.S.	
Race/Ethnicity						
White, non-Hispanic	210 (54)	181 (46)	1.0	-	N.S.	
Black, non-Hispanic	7 (58)	5 (42)	1.2	0.4-3.9		
Hispanic	6 (43)	8 (57)	0.7	0.2-1.9		
Asian/Pacific Islander	2 (29)	5 (71)	0.4	0.07-1.8		
Native American/Alaska Native	1 (50)	1 (50)	0.9	0.05-13.9		
Multi-racial	9 (82)	2 (18)	3.9	0.8-18.2		
Other	1 (50)	1 (50)	0.9	0.05-13.9		
Education						
<High School	4 (31)	9 (69)	0.4	0.1-1.2	N.S.	
High School diploma or equivalent	34 (47)	38 (53)	0.7	0.4-1.2		
> High School	197 (56)	157 (44)	1.0	-		
Sexual Identity						
Homosexual or gay	211 (54)	179 (46)	1.2	0.7-2.2	N.S.	
Not homosexual or gay	24 (49)	25 (51)	1.0	-		

Table 1.5: Continued

Characteristic	Had an HIV test in past year n (%)	Did not have an HIV test in the past year n (%)	Crude Odds Ratio	95% CI	Adjusted Odds Ratio**	95% CI**
Population Density						
>1000 per mi^2	126 (55)	102 (45)	1.0	-	N.S.	
<1000 per mi^2	102 (52)	95 (48)	0.9	0.6-1.3		
Health Insurance						
Private	144 (57)	108 (43)	1.0	-	N.S.	
Public	33 (52)	30 (48)	0.8	0.5-1.4		
None	41 (48)	45 (52)	0.7	0.4-1.1		
Don't know	15 (43)	20 (57)	0.6	0.3-1.2		
UAI with MSP in past 12 months						
Yes	164 (55)	133 (31)	1.2	0.8-1.8	N.S.	
No	70 (50)	69 (50)	1.0	-		
Sex with Female						
Yes	11 (50)	11 (50)	0.9	0.4-2.0	N.S.	
No	225 (54)	193 (46)	1.0	-		
STD test in the past 12 months						
Yes	115 (82)	25 (18)	**9.0**	**5.4-15.1**	See interaction	
No	66 (33)	134 (67)	1.0	-		

Table 1.5: Continued

Characteristic	Had an HIV test in past year n (%)	Did not have an HIV test in the past year n (%)	Crude Odds Ratio	95% CI	Adjusted Odds Ratio**	95% CI**
Hepatitis Vaccination						
Yes	159 (61)	102 (39)	**2.0**	**1.3-3.1**	N.S.	
No	59 (44)	76 (56)	1.0	-		
Hepatitis C test						
Yes	102 (78)	29 (22)	**5.0**	**3.1-8.1**	See interaction	
No	116 (41)	166 (59)	1.0	-		
Individual conversation about HIV						
Yes	64 (27)	23 (74)	**2.9**	**1.7-4.9**	N.S.	
No	171 (49)	178 (51)	1.0	-		
Group conversation about HIV						
Yes	31 (59)	22 (42)	1.3	0.7-2.2	N.S.	
No	205 (53)	182 (47)	1.0	-		
Wen to Jail in the past 12 months						
Yes	15 (48)	16 (52)	0.8	0.4-1.6	N.S.	
No	221 (54)	186 (46)	1.0	-		
Used non-injection drugs in the past year						
Yes	68 (50)	68 (50)	0.8	0.5-1.2	N.S.	
No	168 (56)	134 (44)	1.0	-		

Table 1.5: Continued

Characteristic	Had an HIV test in past year n (%)	Did not have an HIV test in the past year n (%)	Crude Odds Ratio	95% CI	Adjusted Odds Ratio	95% CI**
Sex under influence of non-injection drugs in the past year						
Yes	48 (35)	42 (47)	1.0	0.6-1.5	N.S.	
No	188 (54)	160 (46)	1.0	-		
Met MSP online						
Yes	143 (56)	114 (44)	1.3	0.9-1.8	N.S.	
No	88 (50)	88 (50)	1.0	-		
Interaction						
Hepatitis C test in the past year						
STD test in the past year	121 (72(	46 (28)			1.0	-
No STD test in the past year	11 (22)	39 (78)			9.3	4.4-19.7
No Hepatitis C test in the past year						
STD test in the past year	9 (35)	17 (65)			1.0	-
No STD test in the past year	13 (17)	64 (83)			2.6	1.0-7.1

*Not enough data to calculate OR's.

Section II: State Report Analysis using Aggregate Data

Table 2.1: Number and percentage of participants by selected characteristics: Men Who Have Sex with Men; Iowa, Minnesota, and South Carolina

Characteristic	No.	(%)
Race/Ethnicity		
White, non-Hispanic	403	89
Black, non-Hispanic	12	3
Hispanic	14	3
Asian/Pacific Islander	8	2
American Indian/Alaska Native	2	0.4
Multiracial	12	3
Other	2	0.4
Age group (yrs)		
18-24	166	37
25-34	104	23
35-44	89	20
45-54	70	15
>= 55	26	6
Education		
<High School	13	3
High School diploma or equivalent	79	17
> High School	361	80
Sexual Identity		
Homosexual	403	89
Bisexual	39	9
Heterosexual	1	0.2
Other	9	2
Health Insurance		
Private	258	57
Public	65	14
None	89	20
Don’t know	38	8
Rural vs Urban		
Rural	206	47
Urban	232	53

Table 2.2: Number and percentage of participants reporting having been tested for HIV by selected characteristics; Iowa, Minnesota, and South Carolina

Characteristic	Tested	
	Ever	Preceding 12 Months
Race/Ethnicity		
White, non-Hispanic	331 (83)	210 (54)
Black, non-Hispanic	11 (92)	7 (58)
Hispanic	10 (71)	6 (43)
Asian/Pacific Islander	3 (38)	2 (29)
American Indian/Alaska Native	1 (50)	1 (50)
Multiracial	11 (92)	9 (82)
Other	2 (100)	1 (50)
Age group (yrs)		
18-24	103 (62)	76 (47)
25-34	89 (88)	67 (68)
35-44	86 (97)	44 (51)
45-54	67 (97)	35 (51)
>= 55	25 (100)	14 (56)
Education		
<High School	8 (62)	4 (31)
High School diploma or equivalent	55 (71)	34 (47)
> High School	306 (86)	197 (55)
Sexual Identity		
Homosexual	342 (86)	211 (54)
Bisexual	23 (61)	20 (53)
Heterosexual	0 (0)	0 (0)
Other	4 (44)	4 (44)
Health Insurance		
Private	216 (85)	144 (57)
Public	57 (88)	33 (52)
None	74 (84)	41 (48)
Don’t know	19 (51)	15 (43)
Rural vs Urban		
Rural	161 (80)	102 (52)
Urban	198 (85)	126 (55)
Total	370 (82)	236 (54)

Table 2.3: Number and percentage of facility types reported as the most recent place of HIV testing ; Iowa, Minnesota, and South Carolina

Facility Type	**No.**	**(%)**
Private doctor's office	132	36
Public health clinic or community health center	96	26
HIV counseling and testing program	47	13
HIV/AIDS street outreach	18	5
Hospital	22	6
Emergency room	4	1
Sexually Transmitted disease clinic	16	4
Blood bank/ Plasma center	10	3
Military	5	1
At home	6	2
Other	12	2

Table 2.4: Number and percentage of reasons for participants not being tested for HIV in the past 12 months; Iowa, Minnesota, and South Carolina

Reason Reported	A reason No. (%)	Main Reason No. (%)
Haven't done anything to get HIV	37 (8)	12 (23)
Afraid of finding out infected with HIV	20 (4)	0 (0)
Don't know where to go	28 (6)	7 (13)
Couldn't get transportation	5 (1)	0 (0)
Don't like needles	13 (3)	3 (6)
Worried name would be reported to the government	15 (3)	3 (6)
Worried someone would find out about the test result	17 (4)	5 (10)
Afraid of losing job, insurance, housing, family or friends if positive	10 (2)	2 (4)
Didn't have time	19 (4)	2 (4)
Didn't have money or insurance	22 (5)	9 (17)
Other	15 (3)	9 (17)

Table 2.5: Number and percentage of participants reporting having had anal sex with a main or casual male partner during the preceding 12 months by selected characteristics; Iowa, Minnesota, and South Carolina

Characteristic	Main Partner		Casual Partner	
	Anal sex	Unprotected anal sex*	Anal sex	Unprotected anal sex*
	No. (%)	No. (%)	No. (%)	No. (%)
Race/Ethnicity				
White, non-Hispanic	264 (79)	204 (78)	211 (63)	130 (64)
Black, non-Hispanic	5 (50)	2 (40)	6 (55)	1 (17)
Hispanic	7 (78)	6 (86)	7 (54)	6 (86)
Asian/Pacific Islander	5 (83)	4 (80)	4 (57)	1 (33)
American Indian/Alaska Native	1 (50)	1 (100)	1 (50)	0 (0)
Multiracial	12 (100)	10 (83)	4 (36)	3 (75)
Other	1 (50)	0 (0)	1 (50)	1 (100)
Age group (yrs)				
18-24	116 (83)	89 (78)	83 (58)	44 (56)
25-34	69 (75)	56 (81)	55 (60)	38 (70)
35-44	64 (84)	49 (78)	47 (67)	33 (73)
45-54	36 (69)	27 (75)	36 (65)	21 (58)
>= 55	10 (59)	6 (60)	14 (58)	7 (50)
Education				
<High School	9 (92)	8 (89)	6 (55)	2 (33)
High School diploma or equivalent	47 (73)	34 (77)	31 (50)	23 (88)
> High School	239 (79)	185 (77)	198 (64)	118 (61)
Sexual Identity				
Homosexual	273 (80)	216 (80)	210 (62)	130 (64)
Bisexual	18 (60)	7 (41)	18 (56)	8 (47)
Heterosexual	0 (0)	0 (0)	1 (100)	1 (100)
Other	3 (60)	3(100)	5 (56)	3 (60)
Health Insurance				
Private	175 (82)	134 (77)	131 (60)	73 (57)
Public	35 (67)	25 (74)	39 (69)	24 (63)
None	62 (82)	48 (77)	42 (57)	31 (78)
Don’t know	21 (66)	18 (90)	21 (62)	13 (72)
Rural vs Urban				
Rural	130 (76)	108 (84)	104 (60)	67 (68)
Urban	157 (81)	113 (72)	126 (64)	72 (58)
Total	298 (78)	227 (61)	235 (61)	143 (38)

*Proportions are of those who reported having anal sex with that type of partner.

Table 2.6: Number and percentage of participants who were negative for HIV reporting having had unprotected anal sex during their most recent sexual encounter with a casual or main partner by partner's HIV serostatus; Iowa, Minnesota, and South Carolina

Partner's serostatus	Insertive		Receptive	
	Anal sex	Unprotected anal sex	Anal sex	Unprotected anal sex
	No. (%)	No. (%)	No. (%)	No. (%)
Main Partner				
HIV-negative	108 (50)	84 (78)	119 (48)	93 (65)
HIV-positive	10 (48)	9 (90)	11 (58)	10 (91)
Unknown	18 (64)	16 (89)	11 (42)	11 (10)
Total	139 (52)	110 (80)	145 (58)	115 (81)
Casual Partner				
HIV-negative	34 (37)	23 (65)	32 (42)	19 (59)
HIV-positive	5 (31)	4 (80)	12 (80)	10 (83)
Unknown	21 (31)	11 (52)	28 (52)	20 (71)
Total	61 (34)	39 (63)	72 (50)	49 (68)

Table 2.7: Number and percentage of participants reporting noninjection-drug use during the preceding 12 months, by selected characteristics; Iowa, Minnesota, and South Carolina

Characteristic	No.	(%)
Race/Ethnicity		
White, non-Hispanic	124	31
Black, non-Hispanic	1	8
Hispanic	5	36
Asian/Pacific Islander	3	38
American Indian/Alaska Native	1	50
Multiracial	3	25
Other	0	0
Age group (yrs)		
18-24	63	38
25-34	33	32
35-44	21	24
45-54	17	25
>= 55	3	12
Education		
<High School	2	15
High School diploma or equivalent	25	33
> High School	109	31
Sexual Identity		
Homosexual	119	30
Bisexual	10	26
Heterosexual	1	100
Other	5	56
Health Insurance		
Private	65	26
Public	22	34
None	33	38
Don’t know	15	41
Rural vs Urban		
Rural	62	29
Urban	74	32

Table 2.8: Number and percentage of persons who reported using noninjection drugs and being under the influence of noninjection drugs while having sex during the preceding 12 months by type of drug used; Iowa, Minnesota, and South Carolina

Noninjection drug	Used Drug	Under influence during sex
	No. (%)	No. (%)
Marijuana	113 (25)	64 (14)
Cocaine	30 (7)	16 (4)
Ecstacy	22 (5)	11 (2)
Poppers (amyl nitrate)	41 (9)	35 (8)
Stimulant (e.g., amphetamine or methamphetamine)	22 (5)	18 (4)
Downer (e.g., valium, ativan, or xanax)	32 (7)	12 (3)
Other club drug (e.g. GHB or ketamine)	16 (4)	8 (2)
Pain Killer (e.g., oxycontin or percocet)	36 (8)	21 (5)
Crack	12 (3)	9 (2)
Hallucinogen (e.g., LSD or mushrooms)	11 (2)	3 (1)
Heroin	4 (1)	2 (0.4)

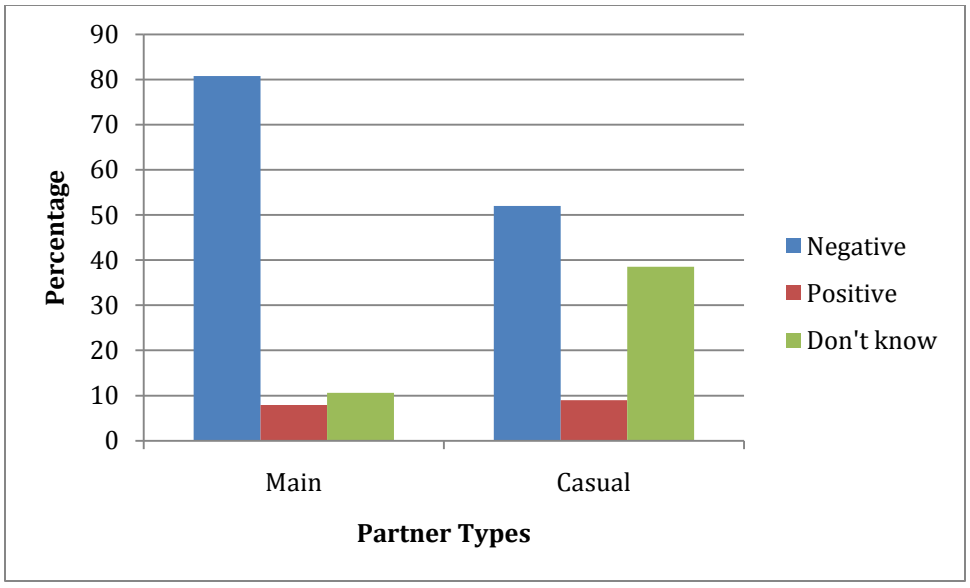
Table 2.9: Number and percentage of participants reporting hepatitis vaccination and sexually transmitted disease (STD) testing by selected characteristics; Iowa, Minnesota, and South Carolina

Characteristic	Hepatitis vaccination No. (%)	STD testing No. (%)
Race/Ethnicity		
White, non-Hispanic	242 (61)	129 (41)
Black, non-Hispanic	6 (50)	3 (38)
Hispanic	9 (64)	7 (58)
Asian/Pacific Islander	3 (38)	2 (40)
American Indian/Alaska Native	0 (0)	0 (0)
Multiracial	6 (50)	3 (33)
Other	1 (50)	0 (0)
Age group (yrs)		
18-24	97 (60)	51 (39)
25-34	63 (62)	39 (47)
35-44	58 (65)	29 (42)
45-54	35 (51)	19 (13)
>= 55	15 (60)	6 (27)
Education		
<High School	3 (23)	1 (13)
High School diploma or equivalent	31 (41)	22 (41)
> High School	233 (65)	120 (41)
Sexual Identity		
Homosexual	242 (61)	128 (41)
Bisexual	21 (54)	12 (38)
Heterosexual	1 (100)	0 (0)
Other	3 (33)	3 (38)
Health Insurance		
Private	169 (67)	89 (43)
Public	35 (55)	22 (42)
None	49 (55)	19 (35)
Don’t know	13 (35)	11 (32)
Rural vs Urban		
Rural	108 (53)	41 (29)
Urban	151 (66)	98 (49)

Table 2.10: Number and percentage of participants reporting having used HIV prevention services or programs during the preceding 12 months, by selected characteristics; Iowa, Minnesota, and South Carolina

Characteristic	Received Free condoms	Individual-level intervention	Group-level intervention
	No. (%)	No. (%)	No. (%)
Race/Ethnicity			
White, non-Hispanic	197 (49)	74 (19)	42 (10)
Black, non-Hispanic	6 (50)	6 (50)	4 (33)
Hispanic	7 (50)	4 (28)	3 (21)
Asian/Pacific Islander	4 (57)	1 (13)	1 (13)
American Indian/Alaska Native	1 (50)	0 (0)	0 (0)
Multiracial	6 (50)	3 (25)	4 (33)
Other	1 (50)	0 (0)	0 (0)
Age group (yrs)			
18-24	93 (56)	22 (13)	17 (10)
25-34	51 (50)	28 (27)	14 (14)
35-44	39 (44)	19 (22)	11 (12)
45-54	29 (43)	17 (25)	10 (14)
>= 55	10 (38)	2 (8)	2 (8)
Education			
<High School	7 (54)	4 (31)	3 (23)
High School diploma or equivalent	28 (35)	13 (17)	8 (10)
> High School	186 (52)	70 (20)	42 (12)
Sexual Identity			
Homosexual	199 (50)	82 (21)	47 (12)
Bisexual	16 (42)	4 (11)	5 (13)
Heterosexual	0 (0)	0 (0)	0 (0)
Other	5 (53)	1 (11)	1 (11)
Health Insurance			
Private	130 (51)	44 (17)	26 (10)
Public	33 (51)	21 (32)	15 (23)
None	37 (42)	15 (17)	8 (9)
Don’t know	19 (50)	7 (19)	3 (8)
Rural vs Urban			
Rural	83 (41)	24 (12)	21 (10)
Urban	131 (57)	61 (26)	31 (13)

Figure 1: HIV serostatus of the most recent male sex partner of participants who reported being HIV-negative, by type of partner; Iowa, Minnesota, and South Carolina



APPENDIX A
Survey Instrument and State Questions

Non-NHBS State Behavior CORE SURVEY

Demographics

Thank you for interest in our survey.

Helpful tips:

- ***Please note that at any time during the survey, you can save your progress and return later to complete the survey -- just click the text "Save and continue survey later" on the top of the browser window.***
- ***Questions marked with a red asterisk (*) are required questions that you need to answer to determine eligibility to be in the study.***
- ***Use the back button at the bottom of each page, rather than the back button on your browser.***

First, we have a few questions to determine if your are eligible to participate in the survey.

1.) What is your sex?

( ) Male

( ) Female

2.) What is your age?

_____

3.) In the past 12 months, have you had sex with:

( ) One or more men

( ) One or more women

( ) Both men and women

( ) I have not had sex in the past year

Informed consent

Emory University Rollins School of Public Health
Consent to be a Research Subject

Title: Small-state HIV Behavioral Surveillance Internet-based Survey

Principal Investigator: R. Craig Sineath, BS and Patrick Sullivan, DVM, PhD

Sponsor: National Institutes of Health (NIH)

Purpose

You are invited to participate in an online research study of men who use the Internet. This study is being conducted by the Emory University Rollins School of Public Health and will enroll up to 3,500 men. The purpose of this study is to learn about behaviors that put people at risk for getting diseases transmitted by having sex (like STDs and HIV) and to assess prevention strategies used in your area. The information we learn from this study will help create better HIV prevention programs for people in your community.

Study procedures

If you decide to join the study, you will be asked to complete a survey that will take approximately thirty minutes to complete. You have the right to withdraw from the study at any time and you will not be penalized in any way.

You will take the Internet survey on a computer. The website where the surveys are located is secure and any answers you give us will be safely stored on a password-protected computer that can only be accessed by Emory University researchers. Researchers will not be able to link your responses to your MySpace page. You can refuse to answer a question at any time. If you don't answer a question, or if you want to end any of the surveys at any time, there will be no penalty to you.

Risks and Discomforts

Surveys: All measure will be taken to ensure your answers to the surveys will remain confidential; however, Emory cannot guarantee confidentiality if this survey is completed on a publically accessible computer such as a library computer. Some of the questions in the survey are about sex and drugs and may make you feel uncomfortable. Your participation is completely voluntary and you can refuse to answer a question at any time.

Your personal information: We will not ask you to provide your name, mailing address, phone number, or an email address as part of this study. However, we will ask for your zip code and researchers will have access to you IP address. This information will in no way be linked to your Myspace page.

Benefits

Information from this study may be used to improve HIV testing and prevention programs for people in your community. This study is not designed to benefit you directly.

Confidentiality

Any information that is collected will not be linked to any identifying information. The only identifying information that will be collected is your zip code and IP address. The results will not be linked to your Myspace page.

Costs to you

It will not cost you anything to be in this study other than your time.

Compensation
There will be no compensation for this study.

Alternatives to being in the study
The other choice you can make is to refuse to be in the study—say "No." You will not be penalized in any way, and you will not lose any rights, services or benefits if you refuse.

HIPAA Authorization to Use or Disclose Health Information

The privacy of your health information is important to us. In protecting your health information that identifies you, we will follow all requirements of the Health Insurance Portability and Accountability Act ("HIPAA" for short) that apply. This section of the form will let you know how we will use any health information that you give us for this study that could potentially identify you. The information that you give us for this study that could potentially identify you is your name, mailing address, phone number and email address. Please read this section of the form carefully and if you agree with it, sign the form at the end.

People That Will Use or Disclose Your Health Information that Identifies You and Purpose of Use/Disclosure:
The following people and groups will use and disclose your health information in connection with the study. In this form, all of these people and groups are called the "Information Users":
The principal investigator, his research staff and people and organizations that he uses to help him conduct the Research Study will use and disclose your health information to do this work.

There are a number of University persons/units, government agencies and other individuals and organizations that may use and disclose your health information to make sure that the Research Study is being conducted correctly and safely, and to monitor and regulate the research or public health issues. These people and organizations include the following: the Emory University Institutional Review Board; the Emory University Office of Research Compliance; any government agencies who regulate the research including the Office of Human Subjects Research Protections, public health agencies, and your state health department.

By signing this document you agree to allow any of these Information Users to use or disclose your health information that may identify you in order to conduct the Research Study, or to monitor or regulate research. In addition, we will comply with any laws that require us to disclose your health information, such as laws that require us to report child abuse or elder abuse. We also will comply with legal requests, or orders that that require us to disclose your health information, such as subpoenas or court orders. Finally, we may share your health information with a public health authority that the law authorizes to collect or receive such information for the purpose of preventing or controlling disease, injury or disability and/or conducting public health surveillance, investigations or interventions.

Description of Health Information that Identifies You that Will be Used or Disclosed
The Information Users may use or disclose health information about you from the answers you provide to the internet survey questions.

Revoking your Authorization
You do not have to check the "I Agree" box on this Authorization. In addition, if you check the "I Agree" box on this Authorization, later, you may change your mind at any time and revoke (take back) this Authorization. If you want to revoke this Authorization you must write to:

R. Craig Sineath, BS
c/o Patrick Sullivan, DVM, PhD
Rollins School of Public Health
1518 Clifton Road
Atlanta, GA 30322

If you revoke your Authorization, the Researchers will not collect any more health information that identifies you, but they may use or disclose identifiable information that you already gave them in order to notify any of the other Information Users that you have taken back your authorization; to maintain the integrity or reliability of the Research Study; and to comply with any law that they are required to obey.

Other Items You Should Know
HIPAA only applies to people or organizations that are health care providers, health care payers or healthcare clearinghouses. HIPAA may not apply to all Information Users. If HIPAA doesn't apply to an Information User, then that User doesn't have to follow HIPAA requirements when it uses or discloses your health information. You do not have to sign this authorization form, but if you do not, you may not participate in the Research Study.

If your identifying information is removed from your health information, then the information that remains will not be subject to this authorization or covered by HIPAA, and it may be used or disclosed to other persons or organizations, and/or for other purposes.

Expiration Date
This authorization will expire when data analysis for this study is complete.

Withdrawal from the Study
You have the right to leave the study at any time without penalty. This decision will not affect in any way your current or future care/services or any other benefits to which you are otherwise entitled. If you leave the study before the final planned study visit, the study staff may ask you to have some of the final steps done.

The investigators have the right to stop your participation in this study without your consent if:
- ***They believe it is in your best interest;***
- ***You were to object to any future changes that may be made in the study plan;***
- ***or for any other reason.***

Contact Information

If you have problems, questions, complaints, or concerns about the study, please contact the investigator in charge, Craig Sineath, rsineat@emory.edu .

If you have questions about your rights as a research subject or if you have questions, concerns or complaints about the research, you may contact the Emory Institutional Review Board at 404-712-0720 or 877-503-9797 or irb@emory.edu.

Statement of consent
Being in this study is entirely up to you. You have the right to refuse to be in the study or to stop your participation in the study at any time. Please print a copy of this form for your records.

If you agree to the above information and would like to participate in this study, please click on "I Agree" below.

.

4.) Please read the above information about the study. Then, indicate whether you consent to participate in the study.
( ) I have read the information above. I consent to participate in the survey

( ) I do not consent to participate in the survey

Click here to link to a PDF of the entire consent, to read or print:

Link to PDF of Consent Form

Race and sexual orientation

5.) Do you consider yourself to be Hispanic or Latino?

( ) Yes

( ) No

( ) Don't Know

( ) Prefer not to answer

6.) Which racial group do you consider yourself to be in?

( ) Asian/Pacific Islander

( ) Black/African-American

( ) White/Caucasian

( ) Native American/Alaska Native

( ) Multi-Racial

( ) Prefer not to answer

( ) Other

) You indicated that you are muti-racial. Please check all of the racial groups your consider yourself to be in.

[ ] Asian/Pacific Islander

[ ] Black/African American

[ ] White/Caucasian

[ ] American Indian/Alaskan Native

[ ] Other

7.) What is your zip code?

_____

8.) How long (in months) have you lived in this area?

_____

9.) What type of health insurance do you currently have?

( ) Private

( ) Public

( ) None

( ) Don't know

Education and identity

10.) What is the highest grade in school you completed?

( ) College, post graduate, or professional school

( ) Some college, Associate's degree, and/or Technical school

( ) High school or GED

( ) Some high school

( ) Less than high school

( ) Never attended school

( ) Don't Know

( ) Prefer not to Answer

11.) Do you think of yourself as:

( ) Heterosexual or "Straight"

( ) Homosexual, Gay

( ) Bisexual

( ) Other

( ) Prefer not to answer

Outness and venue attendance

12.) In the last 12 months, how often have you gone to a bar or dance club frequented by gay men?

( ) Never attend

( ) Once a month or less

( ) About once a week

( ) Several times a week

( ) Once a day or more

( ) Don't know

( ) Prefer not to answer

13.) In the last 12 months, how often have you gone to a bathhouse or sex club frequented by gay men?

( ) Never attend

( ) Once a month or less

( ) About once a week

( ) Several times a week

( ) Once a day or more

( ) Don't know

( ) Prefer not to answer

Online sex seeking

14.) In the past 12 months, have you gone online to meet sex partners?

( ) Yes

( ) No

( ) Prefer not to answer

) How did you try to meet sex partners online? Check all that apply.

[ ] Through online personal ads

[ ] Through online chatrooms

[ ] By using online communities or message boards

[ ] By visiting web sites that are free of charge

[ ] By visiting websites that require a paid subscription

[ ] Other

15.) Which of these websites have you frequented in the past year?

[ ] Myspace

[ ] Facebook

[ ] CraigsList

[ ] Adam4Adam

[ ] Manhunt

[ ] D-list

[ ] FindFred

[ ] Friendster

[ ] Grindr

[ ] Other, please specify

16.) In the past 12 months, how often have you used one or more of these sites for purposes other than to look for sex (e.g., chat, socialize, look at pictures, etc.)?

( ) Almost never

( ) Rarely

( ) Sometimes

( ) Often

( ) Almost always

Sexual activities

17.) During the past 12 months, how many different men ***have you had anal or oral sex with? Estimates are OK if you don't remember the exact number.***

_____

18.) During the past 12 months, how many different women ***have you had vaginal or anal sex with? Estimates are OK if you don't remember the exact number.***

_____

Male Partner Types

19.) Of the [question("value"), id="45"] male partners you had sex with in the past 12 months, how many were:

_____main partners?

_____casual partners?

Please ensure that the total number of main + casual partners equals [question("value"), id="45"].

20.) Was any of these [question("value"), id="45"] male sex partners an exchange partner -- that is a partner that you have sex with in exchange for money, drugs, food, or something else of value?

( ) Yes

( ) No

( ) Don't know

( ) Prefer not to answer

New Page

21.) Of the [question("value"), id="45"] male partners you had anal or oral sex with in the past 12 months, how many did you meet on the Internet?

_____

The total number of sex partners met on the internet cannot be more than the total number of male sex partners ([%%45:During the past %%]).

22.) Of the [question("value"), id="45"] male partners you had anal or oral sex with in the past 12 months, how many did you have anal sex with?

_____

The total number of anal sex partners cannot be more than the total number of male sex partners ([%%45:During the past %%]).

Male proportion UAI COPY

23.) In the past 12 months, did you have unprotected anal sex with your male anal sex partner? (This means that you or your partner did not use a condom at any time during sex).

( ) Yes

( ) No

( ) Don't know

( ) Prefer not to answer

) Of your [question("value"), id="571"] partners you had anal sex with in the past 12 months, how many did you have unprotected anal sex with? (This means that you or your partner did not use a condom at any time during sex).

_____

The number of male partners you had unprotected anal sex with can't be more than the total number of anal sex partners ([%%49:Of the [%% %%]).

Casual Partners

24.) Have you had anal sex with any of your casual sex partners in the past 12 months?

( ) Yes

( ) No

( ) Don't know

( ) Prefer not to answer

) Have you had unprotected anal sex with any of your casual sex partners in the past 12 months?

( ) Yes

( ) No

( ) Dont know

( ) Prefer not to answer

Main Partners

25.) Have you had anal sex with any of your main male sex partners in the past 12 months?

( ) Yes

( ) No

( ) Don't know

( ) Prefer not to answer

) Have you had unprotected anal sex with any of your main male sex partners in the past 12 months?

( ) Yes

( ) No

( ) Don't know

( ) Prefer not to answer

Main Partner

The following questions are about your most recent male sex partner. This is the last man that you had sex with, and could be your main sex partner or a casual sex partner. By sex, we mean either oral or anal sex.

26.) Please enter a nickname for this partner to help make the questions clearer. This should NOT be his real name – it could be his initials, or a nickname that you call him. This name will NOT be saved in your responses; it is just to help make the next few questions clearer.

_____

SEXFREQ MAIN MALE

27.) In what month and year did you* first *have sex with [%%54:Please enter a %%]?

Month

( ) Don't know

( ) January

( ) February

( ) March

( ) April

( ) May

( ) June

( ) July

( ) August

( ) September

( ) October

( ) November

( ) December

Year

( ) Don't know

( ) 2010

( ) 2009

( ) 2008

( ) 2007

( ) 2006

( ) 2005

( ) 2004

( ) 2003

( ) 2002

( ) 2001

( ) 2000

( ) 1999

( ) 1998

( ) 1997

( ) 1996

( ) 1995

( ) 1994

( ) 1993

( ) 1992

( ) 1991

( ) 1990

( ) 1989

( ) 1988

( ) 1987

( ) 1986

( ) 1985

( ) 1984

( ) 1983

( ) 1982

( ) 1981

( ) 1980

( ) Before 1980

The date you enter cannot be in the future. Please enter a date not later than November 2010.

28.) In the past year, how many times have you had anal or oral sex with [%%54:Please enter a %%]?

( ) One time

( ) 2 - 5 times

( ) 6 - 10 times

( ) More than 10 times

( ) I don't know

( ) Prefer not to answer

) About how often did you have anal or oral sex with [%%54:Please enter a %%] over the past year?

( ) About once a month

( ) 2 or 3 times a month

( ) About once a week

( ) 2 or 3 times a week

( ) More than 3 times a week

29.) Have you had anal sex with [%%54:Please enter a %%] in the past 12 months?

( ) Yes

( ) No

( ) Don't know

( ) Prefer not to answer

) Have you had unprotected anal intercourse with [%%54:Please enter a %%] in the past 12 months? This means that you or your partner did not use a condom at all during anal sex.

( ) Yes

( ) No

( ) Don't know

( ) Prefer not to answer

About main male partner

Now we have a few questions about [question("value"), id="54"].

30.) Where did you first meet [%%54:Please enter a %%]?

( ) Bar/Club

( ) Cruising area

( ) Adult bookstore

( ) Bath house, sex club or sex resort

( ) Private sex party

( ) Circuit party or Rave

( ) Internet

( ) On the street

( ) Through friends

( ) At church

( ) School or work

( ) Through a personal ad in a newspaper

( ) On a telephone chat line or dating line

( ) Other

31.) What is [%%54:Please enter a %%]'s current age?

( ) Don't know

( ) 18

( ) 19

( ) 20

( ) 21

( ) 22

( ) 23

( ) 24

( ) 25

( ) 26

( ) 27

( ) 28

( ) 29

( ) 30

( ) 31

( ) 32

( ) 33

( ) 34

( ) 35

( ) 36

( ) 37

( ) 38
( ) 39
( ) 40
( ) 41
( ) 42
( ) 43
( ) 44
( ) 45
( ) 46
( ) 47
( ) 48
( ) 49
( ) 50
( ) 51
( ) 52
( ) 53
( ) 54
( ) 55
( ) 56
( ) 57
( ) 58
( ) 59
( ) 60
( ) 61
( ) 62
( ) 63
( ) 64
( ) 65
( ) 66
( ) 67
( ) 68
( ) 69

( ) 70

( ) More than 70 years old

) As far as you know, which of the following statements about [%%54:Please enter a %%]'s age is most true?

( ) He is within a year of my age

( ) He is at least 2 years younger than I am

( ) He is 2-10 years older than I am

( ) He is more than 10 years older than I am

32.) As far as you know, does [%%54:Please enter a %%] consider himself to be Hispanic or Latino?

( ) Yes

( ) No

( ) Don't know

( ) Prefer not to answer

33.) As far as you know, what race does [%%54:Please enter a %%] consider himself to be?

( ) Asian/Pacific Islander

( ) Black/African-American

( ) White/Caucasian

( ) Native American/Alaska Native

( ) Multi-Racial

( ) Decline to Respond

( ) Other

34.) What kind of sex partner is [%%54:Please enter a %%]?

( ) A main sex partner (Someone you feel committed to above all others)

( ) A casual sex partner (Someone you do not feel committed to above all others)

) Is [%%54:Please enter a %%] an exchange partner (someone who you have sex with in exchange for money, drugs, food, or something else of value)?

( ) Yes

( ) No

( ) Don't know

( ) Prefer not to answer

Last sex question

The next questions are about the last time you had sex with [question("value"), id="54"]. Remember, your answers are confidential.

35.) In what month and year did you **most recently** ***have sex with [%%54:Please enter a %%]?***

Month

( ) Don't know

( ) January

( ) February

( ) March

( ) April

( ) May

( ) June

( ) July

( ) August

( ) September

( ) October

( ) November

( ) December

Year

( ) Don't know

( ) 2010

( ) 2009

The month and year of your most recent sex with [%%54:Please enter a %%] must be within the past 12 months. Please enter a date no later than November 2010, and after November 2009.

36.) The last time you had sex with [%%54:Please enter a %%], did you have receptive anal sex? (This means that you were the bottom)

( ) Yes

( ) No

( ) Don't know

( ) Prefer not to answer

) Did [%%54:Please enter a %%] use a condom the last time you had receptive anal sex (bottomed)? Choose one.

( ) He did not use a condom

( ) He used a condom part of the time

( ) He used a condom the whole time

( ) He used a condom, but it broke

( ) Don't Know

( ) Prefer not to Answer

37.) The last time you had sex with [%%54:Please enter a %%], did you have insertive anal sex? (This means that you were the top).

( ) Yes

( ) No

( ) Don't know

( ) Prefer not to answer

) Did you use a condom the last time you had insertive anal sex with [%%54:Please enter a %%]? Choose one.

( ) I did not use a condom

( ) I used a condom part of the time

( ) I used a condom the whole time

( ) I used a condom, but it broke

( ) Don't Know

( ) Prefer not to Answer

Last Sex Situation

38.) The last time you had anal or oral sex with [%%54:Please enter a %%], were you high or buzzed on any of the following?

( ) Alcohol

( ) Drugs not prescribed by a doctor

( ) Both alcohol and drugs not prescribed by a doctor

( ) Neither drugs nor alcohol

( ) Don't Know

( ) Prefer not to Answer

39.) The last time you had anal or oral sex with [%%54:Please enter a %%], did you know his HIV status?

( ) Yes

( ) No

( ) Don't know

( ) Prefer not to answer

) The last time you had sex with [%%54:Please enter a %%], what was his HIV status?

( ) HIV-negative

( ) HIV-positive

( ) Prefer not to Answer

Knowledge of HIV status before first sex male partner

40.) Before you had sex with [%%54:Please enter a %%] **for the first time in [%%264:firstsexmo %%] [%%191:Year %%],** ***did you discuss BOTH your HIV status AND his HIV status?***

( ) Yes

( ) No

( ) Don't know

( ) Prefer not to answer

HIV testing

41.) Have you ever been tested for HIV?

( ) Yes

( ) No

( ) Don't know

( ) Refuse to answer

) Have you been tested for HIV in the past 12 months?

( ) Yes

( ) No

( ) Don't know

) In what month and year did you have your first ***HIV test?***

Month

( ) Don't know

( ) January

( ) February

( ) March

( ) April

( ) May

( ) June

( ) July

( ) August

( ) September

( ) October

( ) November

( ) December

Year

( ) Don't know

( ) 2010

( ) 2009

( ) 2008

( ) 2007

( ) 2006

( ) 2005

( ) 2004

( ) 2003

( ) 2002

( ) 2001

( ) 2000

( ) 1999

( ) 1998

( ) 1997

( ) 1996

( ) 1995

( ) 1994

( ) 1993

( ) 1992

( ) 1991

( ) 1990

( ) 1989

( ) 1988

( ) 1987

( ) 1986

( ) 1985

) In what month and year did you have your* most recent *HIV test?

Month

( ) Don't know

( ) January

( ) February

( ) March

( ) April

( ) May

( ) June

( ) July

( ) August

( ) September

( ) October

( ) November

( ) December

Year

( ) Don't know

( ) 2010

( ) 2009

( ) 2008

( ) 2007

( ) 2006
( ) 2005
( ) 2004
( ) 2003
( ) 2002
( ) 2001
( ) 2000
( ) 1999
( ) 1998
( ) 1997
( ) 1996
( ) 1995
( ) 1994
( ) 1993
( ) 1992
( ) 1991
( ) 1990
( ) 1989
( ) 1988
( ) 1987
( ) 1986
( ) 1985

The date you enter cannot be in the future. Please enter a date not later than November 2010.

42.) How likely is it that you'll get tested for HIV in the next 12 months?
( ) Very likely
( ) Somewhat likely
( ) Somewhat unlikely
( ) Very unlikely

43.) In the past two years, how many times have you been tested?

_____

HIV Testing II

44.) Of the [question("value"), id="441"] times you were tested in the past 2 years, how many times did you <u>NOT</u> get the results of the test?

_____

45.) When you got tested in [question("value"), id="438"][question("value"), id="439"] was it anonymous? This means you did not give your name to get tested. Usually you are given a number to get your test result.

( ) Yes

( ) No

( ) Don't know

HIV last test details

46.) When you were last tested in [%%268:testmo %%] [%%205:Year %%], where did you get tested?

( ) Private doctor's office (including HMO)

( ) Community health center/public health clinic

( ) HIV counseling and testing site

( ) HIV/AIDS street outreach program/Mobile Unit

( ) Hospital (inpatient)

( ) Emergency room

( ) Sexually transmitted disease clinic

( ) Drug treatment program

( ) Correctional facility (jail or prison)

( ) Blood bank/Plasma center

( ) Military

( ) At home

( ) Other

47.) What was the result of your most recent HIV test in [%%268:testmo %%] [%%205:Year %%]?

( ) Negative

( ) Positive

( ) Indeterminant/Inconclusive

( ) Didn't get the results of my last HIV test

( ) Prefer not to Answer

48.) What type of test was used on your last HIV test?

( ) A rapid test, where someone drew your blood and you got the results within a few hours or less

( ) A test where someone drew your blood and you had to return in a few weeks for the results

( ) An oral test, where you or someone else took a swab from your mouth

( ) Or some other type of test

) In what month and year did you first test HIV positive?

Month

( ) Don't know

( ) January

( ) February

( ) March

( ) April

( ) May

( ) June

( ) July

( ) August

( ) September

( ) October

( ) November

( ) December

Year

( ) Don't know

( ) 2010

( ) 2009

( ) 2008

( ) 2007

( ) 2006

( ) 2005

( ) 2004

( ) 2003

( ) 2002
( ) 2001
( ) 2000
( ) 1999
( ) 1998
( ) 1997
( ) 1996
( ) 1995
( ) 1994
( ) 1993
( ) 1992
( ) 1991
( ) 1990
( ) 1989
( ) 1988
( ) 1987
( ) 1986
( ) 1985

Persons who have not tested for HIV in the past 12 months

49.) What are the reasons for you not having an HIV test in the past 12 months? Check all that apply.

[ ] Because you haven't done anything to get HIV

[ ] Because you were afraid of finding out that you had HIV

[ ] Because you don't know where to go to get tested

[ ] Because you couldn't get transportation to a testing place

[ ] Because you don't like needles

[ ] Because you were worried your name would be reported to the government if you tested positive

[ ] Because you were worried someone would find out about your test results

[ ] Because you were afraid of losing your job, insurance, housing, family or friends if people found out you tested positive

[ ] Because you didn't have time

[ ] Because you didn't have the money or the insurance to pay for the test

[ ] Other (please specify)

Persons who have not tested for HIV in the past 12 months II

50.) You mentioned more than one reason that you haven't been tested for HIV in the past 12 months. Of these reasons, which was the <u>most important</u> reason?

( ) Because you haven't done anything to get HIV

( ) Because you don't know where to go to get tested

( ) Because you couldn't get transportation to a testing place

( ) Because you don't like needles

( ) Because you were worried your name would be reported to the government if you tested positive

( ) Because you were worried someone would find out about your test results

( ) Because you were afraid of losing your job, insurance, housing, family or friends if people found out you tested positive

( ) Because you didn't have time

( ) Because you didn't have the money or the insurance to pay for the test

( ) Other (please specify)

Persons who have tested HIV positive

51.) The first time you tested positive, where did you get tested?

( ) HIV/AIDS street outreach program/Mobile Unit

( ) HIV counseling and testing site

( ) Needle exchange program

( ) Adult HIV/AIDS specialty clinic

( ) Sexually transmitted disease clinic

( ) Community health center/public health clinic

( ) Family planning clinic

( ) Prenatal/obstetrics clinic

( ) Other outpatient facility

( ) Hospital (inpatient)

( ) Emergency room

( ) Drug treatment program

( ) Private doctors office (including HMO)

( ) Correctional facility (jail or prison)

( ) Military

( ) At home

( ) Other

52.) When you first tested positive in [question("value"), id="534"],[question("value"), id="535"], was the test anonymous? This means you did not use your name to get tested.

( ) No

( ) Yes

( ) Don't Know

Use/Knowledge of Local Prevention Services

53.) In the past 12 months, have you received information about HIV?

( ) Yes

( ) No

( ) Don't know

) Where have you received information about HIV in the past 12 months?
[ ] Friends/peers

[ ] HIV educator, peer educator, outreach worker

[ ] Social event/ party

[ ] Drug treatment facility

[ ] Television or radio

[ ] Internet

[ ] Bar or nightclub

) What types of information did you receive about HIV?
[ ] Talked to an HIV prevention/ outreach worker

[ ] Received pamphlet, booklet, newsletter about HIV

[ ] Attended small educational group about HIV prevention

[ ] Attended a social event where people talked about HIV

[ ] Trained to be a peer educator

[ ] Media campaign (billboard, radio ad, internet ad, social network ad)

[ ] Safe sex kits in the community

54.) In the last 12 months, which of the following have you used to get information about HIV, STDs, and sexual health?
[ ] GLBT web sites (such as Manhunt or gay.com)

[ ] Email to a health care professional

[ ] Blogs/Forums

[ ] Health insurance websites (such as Blue Cross Blue Shield)

[ ] Internet health sites (such as WebMD or health.com)

[ ] Government sites (such as National Institutes of Health or Centers for Disease Control)

[ ] Television or radio websites

[ ] None of these

Drug Use History

55.) Have you ever shot up or injected any drugs (other than those prescribed for you)? Shooting up means anytime you may have used drugs with a needle, either by mainlining, skin popping or muscling.

( ) No

( ) Yes

) During the past 12 months when you shot up, did you ever share needles with anyone?

( ) No

( ) Yes

56.) During the past 12 months, have you used drugs to get high other than drugs that were prescribed for you or drugs that you may have injected?

( ) No

( ) Yes

) Which of the following drugs have you used in the past 12 months?

[ ] amphetamine, meth, speed, crystal, crank, ice

[ ] crack

[ ] cocaine (smoked, snorted)

[ ] downers (Valium, Ativan, Xanax)

[ ] Pain Killers (Oxycontin, Percocet)

[ ] hallucinogens such as LSD

[ ] ecstasy

[ ] club drugs such as GHB, ketamine

[ ] heroin (smoked, snorted)

[ ] marijuana

[ ] poppers (amyl nitrate)

[ ] other (specify)

57.) In the past 12 months, have you been high or buzzed off of any drugs (that were not prescribed to you and that you did not inject) while having sex?

( ) No

( ) Yes

( ) Don't know

( ) Prefer not to answer

) Which of the following drugs have you used in the past 12 months while having sex?

[ ] Amphetamine, meth speed, crystal, crank, ice

[ ] Crack

[ ] Cocaine (smoked, snorted)

[ ] Downers (Valium, Ativan, Xanax)

[ ] Pain Killers (Oxycontin, Percocet)

[ ] Hallucinogens such as LSD

[ ] Ecstasy

[ ] Club drugs such as GHB, ketamine

[ ] Heroin (smoked, snorted)

[ ] Marijuana

[ ] Poppers (amyl nitrate)

[ ] Other (please specify)

Incarceration

58.) In the past 12 months, have you been arrested?

( ) Yes

( ) No

) How many days did you spend in jail or prison the last time you were held?

_____

) The last time you were held in jail or prison, did you get a test for HIV?
( ) No

( ) Yes

) Did you get the results of that HIV test?
( ) No

( ) Yest

Health care

59.) Have you visited a doctor, nurse or health care provider in the past 12 months?
( ) Yes

( ) No

( ) Don't know

( ) Prefer not to answer

) When you visited a doctor, nurse, or health care provider in the past 12 months, did you tell the health care provider that you have sex with men?
( ) Yes

( ) No

( ) Don't know

( ) Prefer not to answer

) During the past 12 months, did the doctor, nurse or health care provider or someone in their office recommend that you get an HIV test?
( ) Yes

( ) No

( ) Don't know

( ) Prefer not to answer

Routine Provider

60.) Do you have a doctor that you routinely go to for checkups, when you feel ill, etc?

( ) Yes

( ) No

( ) Don't know

) Has this doctor ever asked you if you have sex with men?

( ) Yes

( ) No

( ) Don't know

) Did you tell your doctor that you have sex with men when he or she asked you?

( ) Yes

( ) No

( ) Don't know

) Did you tell your doctor you have sex with men even though he or she didn't ask you?

( ) Yes

( ) No

( ) Don't know

STD testing

61.) In the past 12 months, have you been tested for any STDs, such as syphilis, gonorrhea, or chlamydia?

( ) Yes

( ) No

( ) Don't know

( ) Prefer not to answer

) Which STDs have you been tested for in the past 12 months?
[ ] Syphilis

[ ] Gonorrhea (clap or drip)

[ ] Chlamydia

[ ] Other STD:

62.) In the past 12 months, has a doctor or nurse told you that you have had an STD?
[ ] No

[ ] Yes, Syphilis

[ ] Yes, Gonorrhea (clap or drip)

[ ] Yes, some other STD (specify)

63.) Has a doctor or nurse ever told you that you have hepatitis C?
( ) No

( ) Yes

64.) Have you been tested for hepatitis C in the past 12 months?
( ) No

( ) Yes

( ) Don't know

65.) Has a doctor or nurse ever told you that you have Hepatitis B?
( ) No

( ) Yes

) Are you currently taking medications to treat Hepatitis B infection?
( ) No

( ) Yes

66.) A vaccine is a shot that can prevent you from getting certain infections or diseases. Hepatitis vaccine is given several times as a shot in the arm. Usually there are several months in between the shots. Have you ever had a vaccine for hepatitis?
( ) No

( ) Yes

( ) Don't know

) Which types of hepatitis vaccine have you had?
( ) Hepatitis A vaccine

( ) Hepatitis B vaccine

( ) Hepatitis A and B vaccine

Assessment of Prevention Activities

67.) Are you aware of organizations in your area that provide free safe sex supplies (such as free condoms, lubricants, and dental dams)?
( ) Yes

( ) No

( ) Don't know

68.) In the past 12 months, have you received free condoms?
( ) No

( ) Yes

) From what organization(s) did you get the condoms?
[ ] HIV/AIDS-focused community-based organization

[ ] GLBTQ community health center

[ ] GLBTQ organization (not a health center/HIV org.)

[ ] Needle exchange program

[ ] IDU outreach organization

[ ] Adult HIV/AIDS specialty clinic

[ ] Sexually transmitted disease clinic

[ ] Community health center/public health clinic

[ ] Family planning clinic

[ ] Prenatal/obstetrics clinic

[ ] Drug treatment program

[ ] Private doctors office (including HMO)

[ ] Other

[ ] Don't remember who gave them to me

) Have you used any of the free condoms you received?
( ) No

( ) Yes

) Did getting these free condoms make you more likely to use condoms during sex?
( ) No

( ) Yes

69.) In the past 12 months, not including when you may have been tested for HIV, have you had a one-on-one conversation with an outreach worker, counselor, or prevention program worker about ways to protect yourself or your partners from getting HIV or other sexually transmitted diseases?
( ) No

( ) Yes

) What organization(s) did this person work for?
[ ] HIV/AIDS-focused community-based organization

[ ] GLBTQ community health center

[ ] GLBTQ organization (not a health center/HIV org.)

[ ] Needle exchange program

[ ] IDU outreach organization

[ ] Adult HIV/AIDS specialty clinic

[ ] Sexually transmitted disease clinic

[ ] Community health center/public health clinic

[ ] Family planning clinic

[ ] Prenatal/obstetrics clinic

[ ] Drug treatment program

[ ] Private doctors office (including HMO)

[ ] Other

[ ] Don't remember who gave them to me

) During your individual session(s), did you:

[ ] Discuss ways to talk to a partner about safer sex?

[ ] Practices ways to talk with a partner about safer sex?

[ ] Discuss ways to effectively use condoms?

[ ] Practice ways to effectively use condoms?

[ ] Discuss safer drug-injecting practices

) Do you think you talk with your partner(s) differently about safer sex because of this session?

( ) No

( ) Yes

70.) In the past 12 months have you been a participant in any sessions involving a small group of people to talk about ways to protect yourself or your partners from getting HIV or other sexually transmitted diseases?

( ) No

( ) Yes

71.) What organization(s) conducted or sponsored these sessions?

[ ] HIV/AIDS-focused community-based organization

[ ] GLBTQ community health center

[ ] GLBTQ organization (not a health center/HIV org.)

[ ] Needle exchange program

[ ] IDU outreach organization

[ ] Adult HIV/AIDS specialty clinic

[ ] Sexually transmitted disease clinic

[ ] Community health center/public health clinic

[ ] Family planning clinic

[ ] Prenatal/obstetrics clinic

[ ] Drug treatment program

[ ] Private doctors office (including HMO)

[ ] Other

[ ] Don't remember who gave them to me

72.) During your group session(s), did you:

[ ] Discuss ways to talk to a partner about safer sex?

[ ] Practice ways to talk with a partner about safer sex?

[ ] Discuss ways to effectively use condoms?

[ ] Practice ways to effectively use condoms?

[ ] Discuss safer drug-injecting practices?

73.) Do you think you talk with your partner(s) differently about safer sex because of this session?

( ) No

( ) Yes

Thank You!

Thank you for taking our survey. Your response is very important to us.

To find an HIV testing location near you, please visit:

www.hivtest.org

To get more information about HIV, please visit:

www.cdc.gov/hiv

Otherwise, you can close your browser.

Iowa Local Questions

1.) In the past 12 months, how often have you used one or more of these sites for purposes other than to look for sex (e.g., chat, socialize, look at pictures, etc.)?

( ) Almost never

( ) Rarely

( ) Sometimes

( ) Often

( ) Almost always

2) Which of the following HIV counseling and testing sites did you reveive HIV Counseling and Testing from?

[ ] AIDS Project of Central Iowa - Des Moines

[ ] Black Hawk County Health Department - Waterloo

[ ] Cerro Gordo County Health Department - Mason City

[ ] Council Bluffs City Health Department - Council Bluffs

[ ] Emma Goldman Clinic - Iowa City

[ ] Johnson County Public Health/Free Medical Clinic - Iowa City

[ ] Linn County Public Health - Cedar Rapids

[ ] Mental Health Institute - Mt. Pleasant

[ ] Polk County Health Department - Des Moines

[ ] Scott County Health Department - Davenport

[ ] Siouxland Community Health Center - Sioux City

[ ] Siouxland District Health Department - Sioux City

[ ] Hillcrest Family Services - Dubuque

[ ] Webster County Public Health - Ft. Dodge

[ ] Dont know

[ ] Other (please specify)

3) Are you aware of organizations in your area that provide free safe sex supplies (such as condoms, lubricants, and dental dams)?

[ ] Yes

[ ] No

[ ] Don't know

4) In the past 12 months, have you received information about HIV?

[ ] Yes

[ ] No

[ ] Don't know

5) If yes, where have you received information about HIV in the past 12 months?

[ ] Friends/peers

[ ] HIV educator, peer educator, outreach worker

[ ] Social event/party

[ ] Drug treatment facility

[ ] Television

[ ] Internet

[ ] Bar or nightclub

6) If yes, what types of information did you receive about HIV?

[ ] Talked to an HIV prevention/ outreach worker

[ ] Received pamphlet, booklet, newsletter about HIV

[ ] Attended small educational group about HIV prevention

[ ] Attended a social event where people talked about HIV

[ ] Trained to be peer education

[ ] Media campaign (billboard, radio ad, internet ad, social network ad)

[ ] Safe sex kits in the community

7.) How would you describe the town or community where you live?

( ) A rural area or small town (under 5,000 people)

( ) A small city (5,000 - 50,000 people - for example Harlan, Algona, Creston, Clinton)

( ) A larger city (50,000+ people - for example Cedar Rapids, Des Moines, Davenport, Sioux City)

8) Do you live within 30 minutes drive of a larger city (50,000+ people) (for example Cedar Rapids, Des Moines, Davenport, Sioux City)?

( ) Yes

( ) No

9) You indicated that you live outside of a larger metropoiltan area. How often do you travel to larger metropolitan areas in Iowa (such as Des Moines, Cedar Rapids, Davenport) to go where other gay, bisexual or other men who have sex with men socialize?

( ) At least weekly

( ) 2-3 times per month

( ) About once a month

( ) A few times per year

( ) About once a year

( ) Less than once a year

( ) Never

10.) The AIDS Project of Central Iowa is developing an online sexual health program for men who have sex with men. Please state your level of interest in an online sexual health program.

( ) Not at all interested

( ) Slightly interested

( ) Somewhat interested

( ) Interested

( ) Highly interested

Use/Knowledge of Local Prevention Services II

11.) Please rate your level of interest in each of the following topics of an online sexual health program. (1=high interest, 2=medium interest, 3=low interest)

	(1) High	(2) Medium	(3) Low
How to be a better lover	( )	( )	( )
Aging as a gay or bisexual man	( )	( )	( )
How to talk about sex	( )	( )	( )
Negotiating safer sex online	( )	( )	( )
Exploring the relationship between my sexuality and my spirituality	( )	( )	( )
Ways to improve how I feel about my body	( )	( )	( )
Dating men online	( )	( )	( )
Ways to improve how I feel about my genitals (penis and testicles) and ass	( )	( )	( )
Developing an intimate relationship	( )	( )	( )
Watching how to put on a condom correctly	( )	( )	( )
Building a healthy relationship	( )	( )	( )
Men's physical health (such as testicular cancer and prostate health)	( )	( )	( )
Ways to feel better about myself	( )	( )	( )
Ways of coping with anxiety	( )	( )	( )
How to evaluate my drug and alcohol use	( )	( )	( )
How to have anal sex without pain	( )	( )	( )
How to date men offline (in real life)	( )	( )	( )
Ways of coping with depression	( )	( )	( )
Developing a long-term plan to minimize getting HIV and STDs (or giving it to others)	( )	( )	( )
Understanding my sexual history and how it affects me	( )	( )	( )
Help with coming out (such as to family)	( )	( )	( )
How to talk about condoms and safer sex	( )	( )	( )
Ways of coping with sexual abuse	( )	( )	( )
Keeping a long term relationship	( )	( )	( )

Des Moines Questions

12.) Do you live in Polk, Dallas, or Warren County?

( ) Yes

( ) No

( ) Don't know

13) Did you know that The AIDS Project of Central Iowa provides free rapid HIV testing?

( ) Yes

( ) No

( ) Don't know

14) Did you know that The AIDS Project of Central Iowa provides free safer sex supplies?

( ) Yes

( ) No

( ) Don't know

Minnesota Local Questions

1.) In the past 12 months, how often have you used one or more of these sites for purposes other than to look for sex (e.g., chat, socialize, look at pictures, etc.)?
( ) Almost never

( ) Rarely

( ) Sometimes

( ) Often

( ) Almost always

2) Which of the following HIV counseling and testing sites did you reveive HIV Counseling and Testing from?
[ ] AIDS Project of Central Iowa - Des Moines

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[ ] Emma Goldman Clinic - Iowa City

[ ] Johnson County Public Health/Free Medical Clinic - Iowa City

[ ] Linn County Public Health - Cedar Rapids

[ ] Mental Health Institute - Mt. Pleasant

[ ] Polk County Health Department - Des Moines

[ ] Scott County Health Department - Davenport

[ ] Siouxland Community Health Center - Sioux City

[ ] Siouxland District Health Department - Sioux City

[ ] Hillcrest Family Services - Dubuque

[ ] Webster County Public Health - Ft. Dodge

[ ] Dont know

[ ] Other (please specify)

3) Are you aware of organizations in your area that provide free safe sex supplies (such as condoms, lubricants, and dental dams)?
[ ] Yes

[ ] No

[ ] Don’t know

4) In the past 12 months, have you received information about HIV?
[ ] Yes

[ ] No

[ ] Don't know

5) If yes, where have you received information about HIV in the past 12 months?
[ ] Friends/peers

[ ] HIV educator, peer educator, outreach worker

[ ] Social event/party

[ ] Drug treatment facility

[ ] Television

[ ] Internet

[ ] Bar or nightclub

6) If yes, what types of information did you receive about HIV?
[ ] Talked to an HIV prevention/ outreach worker

[ ] Received pamphlet, booklet, newsletter about HIV

[ ] Attended small educational group about HIV prevention

[ ] Attended a social event where people talked about HIV

[ ] Trained to be peer education

[ ] Media campaign (billboard, radio ad, internet ad, social network ad)

[ ] Safe sex kits in the community

7.) How would you describe the town or community where you live?
( ) A rural area or small town (under 5,000 people)

( ) A small city (5,000 - 50,000 people - for example Harlan, Algona, Creston, Clinton)

( ) A larger city (50,000+ people - for example Cedar Rapids, Des Moines, Davenport, Sioux City)

8) Do you live within 30 minutes drive of a larger city (50,000+ people) (for example Cedar Rapids, Des Moines, Davenport, Sioux City)?
( ) Yes

( ) No

9) You indicated that you live outside of a larger metropoiltan area. How often do you travel to larger metropolitan areas in Iowa (such as Des Moines, Cedar Rapids, Davenport) to go where other gay, bisexual or other men who have sex with men socialize?

( ) At least weekly

( ) 2-3 times per month

( ) About once a month

( ) A few times per year

( ) About once a year

( ) Less than once a year

( ) Never

10.) The AIDS Project of Central Iowa is developing an online sexual health program for men who have sex with men. Please state your level of interest in an online sexual health program.

( ) Not at all interested

( ) Slightly interested

( ) Somewhat interested

( ) Interested

( ) Highly interested

Use/Knowledge of Local Prevention Services II

11.) Please rate your level of interest in each of the following topics of an online sexual health program. (1=high interest, 2=medium interest, 3=low interest)

	(1) High	**(2) Medium**	**(3) Low**
How to be a better lover	( )	( )	( )
Aging as a gay or bisexual man	( )	( )	( )
How to talk about sex	( )	( )	( )
Negotiating safer sex online	( )	( )	( )
Exploring the relationship between my sexuality and my spirituality	( )	( )	( )
Ways to improve how I feel about my body	( )	( )	( )
Dating men online	( )	( )	( )
Ways to improve how I feel about my genitals (penis and testicles) and ass	( )	( )	( )
Developing an intimate relationship	( )	( )	( )
Watching how to put on a condom correctly	( )	( )	( )
Building a healthy relationship	( )	( )	( )
Men's physical health (such as testicular cancer and prostate health)	( )	( )	( )
Ways to feel better about myself	( )	( )	( )
Ways of coping with anxiety	( )	( )	( )
How to evaluate my drug and alcohol use	( )	( )	( )
How to have anal sex without pain	( )	( )	( )
How to date men offline (in real life)	( )	( )	( )
Ways of coping with depression	( )	( )	( )
Developing a long-term plan to minimize getting HIV and STDs (or giving it to others)	( )	( )	( )
Understanding my sexual history and how it affects me	( )	( )	( )
Help with coming out (such as to family)	( )	( )	( )
How to talk about condoms and safer sex	( )	( )	( )
Ways of coping with sexual abuse	( )	( )	( )
Keeping a long term relationship	( )	( )	( )

Des Moines Questions

12.) Do you live in Polk, Dallas, or Warren County?

( ) Yes

( ) No

( ) Don't know

13) Did you know that The AIDS Project of Central Iowa provides free rapid HIV testing?
( ) Yes

( ) No

( ) Don't know

14) Did you know that The AIDS Project of Central Iowa provides free safer sex supplies?
( ) Yes

( ) No

( ) Don't knowMinnesota Local Questions

1.) In what country were you born?

2.) Have you ever heard of people who do not have HIV taking HIV/AIDS medicines, also called antiretrovirals, to keep from getting HIV?
( ) No

( ) Yes

( ) Don't know

3.) Have you ever used HIV/AIDS medicines because you thought it would reduce your chances of getting HIV?
( ) No

( ) Yes

( ) Don't know

4.) Would you consider using HIV/AIDS medicines that you would take every day to lower your chances of getting HIV if they were offered to you?
( ) No

( ) Yes

( ) Don't know

5.) How would you prefer to receive HIV prevention information (check all that apply)?

[ ] from social media sites online (Facebook, MySpace, Twitter, Flickr, LinkedIn)

[ ] from online video sites (YouTube, HULU, etc.)

[ ] from informational, agency or organizational web sites on the Internet (WebMD, GoAskAlice, TheBody, Wikipedia, Government-Operated sites like CDC)

[ ] from online social connection service sites (Craigslist, Manhunt, Gay.com, Grindr, etc.)

[ ] by e-mail/listserv

[ ] by text message to your mobile phone

[ ] from GLBT newspapers, newsletters or magazines

[ ] from television

[ ] from radio

[ ] from brochures in waiting room/gathering spaces

[ ] in a printed document from my health care provider

[ ] verbally from my health care provider

[ ] at support/discussion groups

[ ] from friends or family member

[ ] from HIV/Health/Nurse hotline

[ ] other (please specify)

South Carolina Local Questions

1.) I believe the chance of me getting HIV is

( ) High

( ) Medium

( ) Low

( ) No risk

( ) Don't know

2.) Do you know all your partners' HIV status (such as if they are HIV-positive or negative) before you have sex with them?

( ) Yes

( ) No

3.) Do you believe that having a Sexually Transmitted Disease (STD) puts someone at increased risk of getting HIV?

( ) Yes

( ) No

( ) Don't know

4.) If pills to prevent HIV infection are made available, I would be willing to take them daily for a lifetime.

( ) Strongly agree

( ) Somewhat agree

( ) Neutral

( ) Somewhat disagree

( ) Strongly disagree

5.) Do you think you are at risk of getting HIV if you continue your present sexual/drug-using activity?

( ) Yes

( ) No

( ) Don't know

6.) Do you think HIV is much of a problem in your community?
( ) Yes

( ) No

( ) Don't know

7.) Are you aware of organizations in your area that provide free safe sex supplies (such as condoms, lubricants, and dental dams)?
( ) Yes

( ) No

( ) Don't know

8.) In the past 12 months have you received information about HIV?
( ) Yes

( ) No

( ) Don't know

) Where have you received information about HIV in the past 12 months?
[ ] Friends/peers

[ ] HIV educator, peer educator, outreach worker

[ ] Social event/ party

[ ] Drug treatment facility

[ ] Television or radio

[ ] Internet

[ ] Bar or nightclub

[ ] Other place (please specify)

) What types of information did you receive about HIV? (select all that apply)
[ ] Talked to an HIV prevention/ outreach worker

[ ] Received pamphlet, booklet, newsletter about HIV

[ ] Attended small educational group about HIV prevention

[ ] Attended a social event where people talked about HIV

[ ] Trained to be peer education

[ ] Media campaign (billboard, radio ad, internet ad, social network ad)

[ ] Safe sex kits in the community

9.) What do you think is the most common reason that stops males-who-have-sex-with-males in your area from taking part in HIV prevention programs? (select all that apply)

[ ] Time

[ ] Transportation

[ ] Perception from other people that you may have HIV if you take part

[ ] Don't want to be associated with an AIDS organization

[ ] Don't know where to go to take part

[ ] Don't trust the people or organizations running the programs

[ ] Other reason (please specify)

10.) What do you think would help males-who-have-sex-with-males in South Carolina to participate more in HIV prevention programs?

[ ] More interesting topics

[ ] Change time when programs offered (such as to weekends or after hours)

[ ] Have programs with people of similar age groups together

[ ] Have programs with people of similar race together

[ ] Move to more neutral venues (e.g. community centers, schools)

[ ] Offer incentives

[ ] Have the facilitator resemble the audience

[ ] Other reason (please specify)

11.) In your opinion, what are some reasons that males-who-have-sex-with-males in South Carolina would NOT want to get tested for HIV in a mobile testing unit at a nightclub or hangout spot? (select all that apply)

[ ] Fear of someone seeing them?

[ ] Fear of assumptions being made about their status?

[ ] Outreach workers too aggressive or not aggressive enough?

[ ] Testing not on their minds at that time?

[ ] Fear of how the results will be handled?

[ ] Peers don't want them to go?

[ ] Fear of finding out their status?

[ ] Other reason? (please specify)

12.) What are some of the things you think are putting males-who-have-sex-with-males in South Carolina at risk for HIV? (select all that apply)

[ ] Lack of awareness

[ ] Education

[ ] Lack of reality among all males-who-have-sex-with-males

[ ] Drugs and Alcohol

[ ] Non-Gay Identifying Men

[ ] Some males-who-have-sex-with-males just don't care

[ ] Down Low

[ ] Mis-Information around HIV Prevention

[ ] HIV fatigue

[ ] Hopelessness

[ ] Depression

[ ] Other reason? (please specify)

APPENDIX B
SAS Code

```
LIBNAME RSINEAT "H:\Thesis\data\3_9_export\MN";
libname data "H:\Thesis\data\StateDataSG";

*************************************************************************
***
***Master's Thesis SAS
Code*********************************************
***R. Craig
Sineath*****************************************************
*************************************************************************
**;

*************************************************************************
*********************************************************;
*************************************************************************
*********************************************************;
***IMPORT, CLEANING, ADDING ZIP DATA;
*************************************************************************
*********************************************************;


*** import the Minnesota SPSS dataset;
  proc import out=work.mn
  datafile='H:\Thesis\data\StateDataSG\MN.sav'
  dbms=SAV replace;
  run;

*** import the South Carolina dataset;
  proc import out=work.sc
  datafile='H:\Thesis\data\StateDataSG\SC.sav'
  dbms=SAV replace;
  run;


*** import the Iowa datasets;
  proc import out=work.ia1
  datafile='H:\Thesis\data\StateDataSG\IA1.sav'
  dbms=SAV replace;
  run;

  proc import out=work.ia2
  datafile='H:\Thesis\data\StateDataSG\IA2.sav'
  dbms=SAV replace;
  run;

*** concatenate the four datasets from above;
 data work.statescombined;
 set work.mn work.sc work.ia1 work.ia2;
 run;

*remove formatS from certain variables;
Proc DataSets Lib = work;
Modify statescombined;
Format jail casanal casuai mainanal mainspuai uai1mpgt lsrai lsurai
lsiai lsuiai lsdrugs mlasthiv lshivres mdiscuss regdr
```

```
            drasked tolddr drnoask hivtstlstyr msptype gethigh highsex;
Run ;
Quit ;

 proc freq data=work.statescombined;
 tables highsex;
 run;

*data cleaning;
  data work.states;
       set work.statescombined;

       if age lt 18 then delete;
*delete observations for those with missing age and younger than 18;

       if whosex=4 then delete;
*delete participants who have not had sex in the past year;

       if whosex=2 then delete;
*delete participants who have only had sex with women in the past year;

       if nummsp=0 then delete;
*delete observations that say 0 male sexual partners in past 12 months;

       if hisp=1 then race=.;
       *if hispanic, don't want to put in ethnicity category below;
       if hisp=9 then race=.;
       if hisp=1 then ethnicity=3;
       if race=1 then ethnicity=4;
       if race=2 then ethnicity=2;
       if race=3 then ethnicity=1;
       if race=4 then ethnicity=5;
       if race=5 then ethnicity=6;
       if race=7 then ethnicity=.;
       if race=6 then ethnicity=7;
*make new variable ETHNICITY combining hisp and race
             1=white, nonhispanic
             2=black, nonhispanic
             3=hispanic
             4=asian/pacific islander
             5=american indian/alaska native
             6=multi-racial
             7=other;

       if consent=0 then delete;
*delete those that did not consent but slipped through SG;

      if whosex=1 then numfsp=0;
*if participants indicated that they only had sex with men, then
numfsp=0,
       not missing because of skip pattern;

*some guys also wrote non-numeric responses into the survey, all of
these are recoded below;
*where there were places for guys to type in numbers, data were
exported as character vars from SG;
*turn character variables into numeric variables below;
```

```
            if webmeet='Craigslist'       then webmeet='.';
            if webmeet='Via Facebook'     then webmeet='.';
            if webmeet='one1'                   then webmeet='1';
      webmeetsex=webmeet*1;

      analfreqsex=analfreq*1;

      mainspsex=mainsp*1;

      casualmspsex=casualmsp*1;

if freqnores='allway got  results'              then freqnores='0';
if freqnores='always get results'               then freqnores='0';
if freqnores='never'                            then freqnores='0';
if freqnores='no'                               then freqnores='0';
if freqnores='none'                             then freqnores='0';
if freqnores='o'                                then freqnores='0';
if freqnores='y'                                then freqnores='.';
if freqnores='na'                               then freqnores='0';
if freqnores='none'                             then freqnores='0';
if freqnores='n/a'                              then freqnores='0';
if freqnores='none got them always'             then freqnores='0';
if freqnores='Tested positive in May 2006'      then freqnores='0';
if freqnores='None'                             then freqnores='0';
if freqnores='Never'                            then freqnores='0';
if freqnores='hello 0'                          then freqnores='0';
if freqnores="I've been positive since '98"     then freqnores='0';
if freqnores='Always got the results.'          then freqnores='0';
if freqnores='Have been HIV+ since 1998'  then freqnores='0';
freqnoresult=freqnores*1;


if freqtest='Every 3 months.  I am HIV+.  On medication'    then
freqtest='8';
if freqtest='every 3 months'                    then freqtest='8';
if freqtest='5-6'                               then freqtest='6';
if freqtest='4+'                                then freqtest='4';
if freqtest='4 or  more'                        then freqtest='4';
if freqtest='1?'                                then freqtest='1';
if freqtest='none'                              then freqtest='0';
if freqtest='Once'                              then freqtest='1';
if freqtest='once every 3 months or so'         then freqtest='8';i
f freqtest="You didn't ask if I was already positive."      then
freqtest='0';
if freqtest='2 times'                           then freqtest='2';
if freqtest='poz'
      then freqtest='0';
if freqtest='twice'                             then freqtest='2';
if freqtest='3 times'                           then freqtest='3';
if freqtest='at least once a year'              then freqtest='2';
if freqtest='been + for 19 years'               then freqtest='0';
if freqtest='8 or more times'                   then freqtest='8';
if freqtest='o'                                 then freqtest='0';
timestested=freqtest*1;

      *recode jail as 0=no 1=yes;
```

```
      if jail=10477 then jail=0;
      if jail=10476 then jail=1;

      if jail=0 then jailtime='0';
      if jailtime='1/2' then jailtime='.5';
      jaildays=jailtime*1;
      *jail was given strange values by SG, 10477=no, 10476=yes (format
was removed above to see this);

      *reporting values for some of the variables were weird when
exported;
      *formats were removed above to reveal the strange number;
      *these numbers are recoded to 1,0 below;
      *recode mainspuai, mainanal, casuai, casanal as
      0=no, 1=yes, .=missing, .=don't know, .=prefer not to answer;
      if casanal=       10806       then casanal=     1;
      if casanal=       10807       then casanal=     0;
      if casanal=       10808       then casanal=     .;
      if casanal=       10809       then casanal=     .;

      if casuai=        10810       then casuai=      1;
      if casuai=        10811       then casuai=      0;
      if casuai=        10812       then casuai=      .;
      if casuai=        10813       then casuai=      .;

      if mainanal=      10814       then mainanal=    1;
      if mainanal=      10815       then mainanal=    0;
      if mainanal=      10816       then mainanal=    .;
      if mainanal=      10817       then mainanal=    .;


      if mainspuai=     10818       then mainspuai=1;
      if mainspuai=     10819             then mainspuai=0;
      if mainspuai=     10820       then mainspuai=.;
      if mainspuai=     10821       then mainspuai=.;

      if regdr=         10794       then regdr=1;
      if regdr=         10795       then regdr=0;

      if drasked=       10797       then drasked=1;
      if drasked=       10978       then drasked=0;
      if drasked=       10799       then drasked=.;

      if tolddr=        10800       then tolddr=1;
      if tolddr=        10801       then tolddr=0;
      if tolddr=        10802       then tolddr=.;

      if drnoask=       10803       then drnoask=1;
      if drnoask=       10804       then drnoask=0;
      if drnoask=       10805       then drnoask=.;

      if hivtstlstyr=   10861       then hivtstlstyr=1;
      if hivtstlstyr=   10862       then hivtstlstyr=0;
      if hivtstlstyr= 10863         then hivtstlstyr=9;

      ***convert all livetimes to values that can be changed to
numeric;
```

```
            if livetime='1 year'          then livetime='12';
            if livetime='12 yrs'          then livetime='144';
            if livetime='120+'                 then livetime='120';
            if livetime='2 years'         then livetime='24';
            if livetime='3 yrs'           then livetime='36';
            if livetime='33 yrs'          then livetime='396';
            if livetime='35 years'        then livetime='420';
            if livetime='6 months'        then livetime='6';
            if livetime='9 years'         then livetime='108';
            if livetime='26 yrs'          then livetime='312';
            if livetime='16 months'       then livetime='16';
            if livetime='12yrs'           then livetime='144';
            if livetime='3 months'        then livetime='3';
            if livetime='26 yrs'          then livetime='312';
            if livetime='4 years'         then livetime='48';
            if livetime='7 years'         then livetime='84';
            if livetime='6 years'         then livetime='72';
            if livetime='6 YEARS'         then livetime='72';
            if livetime='13 years'        then livetime='156';
            if livetime='23 years'        then livetime='276';
            if livetime='21 years'        then livetime='252';
            if livetime='2 yrs'           then livetime='24';
            if livetime='1 yr'                 then livetime='12';
            if livetime='12 years'        then livetime='144';
            if livetime='20 years'        then livetime='240';
            if livetime='72 months'       then livetime='72';
            if livetime='1 month'         then livetime='1';
            if livetime='5 Years'         then livetime='60';
            if livetime='10yrs'                then livetime='120';
            if livetime='5 months'        then livetime='5';
            if livetime='26yrs'                then livetime='312';
            if livetime='6years and 3 months' then livetime='75';
            if livetime='24 months'       then livetime='24';
            if livetime='1 year 4 months' then livetime='16';
            if livetime='18 months'       then livetime='18';
            if livetime='3 years'         then livetime='36';
            if livetime='10 years'        then livetime='120';
            if livetime='12+'                  then livetime='12';
            if livetime='33 yeara'        then livetime='396';
            if livetime='114 months'      then livetime='114';
            if livetime='156 Months'      then livetime='156';
            if livetime='15 years'        then livetime='180';
            if livetime='131 months'      then livetime='131';
            if livetime='487 months'      then livetime='487';
            if livetime='27 years'        then livetime='324';
            if livetime='5 years'         then livetime='60';
            if livetime='30 months'       then livetime='30';
            if livetime='4 years 2 months' then livetime='50';
            if livetime='400 month'       then livetime='400';
            if livetime='240 MONTHS'      then livetime='240';
            if livetime='3yrs'                 then livetime='36';
            if livetime='37 years'        then livetime='444';
            if vip='66.41.125.243'        then livetime='240';
*indicated livetime as 'Whole life';
            if vip='71.209.100.37'        then livetime='408';
*indicated livetime as 'entire life';
```

```
            if vip='209.252.168.246'      then livetime='348';
*indicated livetime as 'entire life';
            if vip='209.56.59.232'        then livetime='252';
*indicated livetime as 'Whole life';
      if livetime="." then livetimemonths=.;

      if livetimemonths=50311 then livetimemonths=.;

      livetimemonths=livetime*1;



      *skip patterns for those indicating main and casual cause some
data to be missing that should be 0;
      if spbreakcasual=0 then casanal=0;
      if spbreakcasual=0 then casuai=0;
      if casanal=0 then casuai=0;   *if they have not had ai with
casual, then they have also not had uai;
      *those without casual partners have not had AI or UAI with casual
sex partners in the past 12 months;

      if spbreakmain=0 then mainanal=0;
      if spbreakmain=0 then mainspuai=0;
      if mainanal=0 then mainspuai=0;     *if they have not had AI with
main, then they have also not had uai;
      *those without a main partner have not had ai or uai with main
sex partners in teh past 12 months;

      if analfreqsex=0 then uai1mpgt=0;
      *those not having AI have not had UAI (missing bc of skip
pattern);

      if uai1mpgt=0 then nummuai=0; *if indicated no UAI, then were not
asked the number of UAI partners, this should be 0, not missing;


      if onempai=0 then lsrai=0; *if no AI with this partner, then no
rai;
      if onempai=0 then lsiai=0; *if no AI with this partner, then no
iai;


      if evertest=0 then timestested=0; *if never had HIV test, times
tested in past 2 years=0;
      if evertest=0 then hresult=.; *if never tested, then don't know
HIV status;
      if evertest=0 then hivtstlstyr=0; *if never tested, didn't test
last year;

      if gethigh=0 then highsex=0;  *if didn't use drugs, didn't have
sex while using;

      if hivtstlstyr=1 then reason1=0;
      if hivtstlstyr=1 then reason2=0;
      if hivtstlstyr=1 then reason3=0;
      if hivtstlstyr=1 then reason4=0;
```

```
      if hivtstlstyr=1 then reason5=0;
      if hivtstlstyr=1 then reason6=0;
      if hivtstlstyr=1 then reason7=0;
      if hivtstlstyr=1 then reason8=0;
      if hivtstlstyr=1 then reason9=0;
      if hivtstlstyr=1 then reason10=0;
      if hivtstlstyr=1 then reason11=0;
      if hivtstlstyr=1 then reason12=0;

if reason1=0 and reason2=0 and reason3=0 and reason4=0
and reason5=0 and reason6=0 and reason7=0 and reason8=0
and reason9=0 and reason10=0 and reason11=0 and reason12=0
then bestreason=.;


      if spbreakmain = 0      then mainanal=0; *if no main partners, no
sex with main;
      if spbreakmain = 0      then mainspuai=0;

      if spbreakcasual=0      then casanal=0; *if no casual partners,
no sex with casual;
      if spbreakcasual=0      then casuai=0;

      if casanal=0 then casuai=.; *if no anal with casual, then no uai
with casual;
      if mainanal=0 then mainspuai=.; *if no anal with main, no uai
with main;



      if mlasthiv=0 then lshivres=9;
      if mlasthiv=9 then lshivres=9;

      if lsuiai=0 then lsuiai=1;
      if lsuiai=1 then lsuiai=1;
      if lsuiai=2 then lsuiai=0;
      if lsuiai=3 then lsuiai=1;
      if lsuiai=9 then lsuiai=9;
      if lsuiai=7 then lsuiai=7;

      if lsurai=0 then lsurai=1;
      if lsurai=1 then lsurai=1;
      if lsurai=2 then lsurai=0;
      if lsurai=3 then lsurai=1;
      if lsurai=9 then lsurai=9;
      if lsurai=7 then lsurai=7;

      if gethigh=10462 then gethigh=0;
      if gethigh=10463 then gethigh=1;
      if gethigh=0 then highsex=0;
      if highsex=10822 then highsex=0;
      if highsex=10823 then highsex=1;

run;


*****************************************************************;
```

```
***MERGE IN POPULATION DENSITY INFORMATION BY ZIP CODE**************;
*****************************************************************;

*** a row with missing values was added into the excel spreadsheet for
      to give observations with missing zipcodes a missing population
      density;

*** import population density dataset;
proc import out=work.zip
  datafile='H:\Thesis\data\Zip Code data\popdensity2004.xls'
  dbms=EXCEL replace;
  run;

*** convert character ZIPCODE to numeric ZIP;
  data work.zipnumeric;
  set work.zip;
      ZIP=zipcode*1;
      if popdensity=-99.00 then popdensity=.;
run;

**sort both datasets by zip to prepare for merge;
proc sort data=work.zipnumeric;
by zip;
run;
proc sort data=work.states;
by zip;
run;


*** merge datasets, only keeping the ZIP's that are in the original
dataset;
data work.combined;
merge states (in=a) zipnumeric (in=b);
by zip;
if a; *     this give a zip code value for every observation in a
            and deletes the zip codes from dataset zip1
            that don't match with any obs;
run;

proc freq data=work.combined;
tables popdensity;
run;
proc freq data=work.zip;
tables popdensity;
run;
*****************************************************************
*************************************************************;
***CREATE CATEGORICAL VARIABLES TO USE FOR STATE
REPORTS*************************************************************
**********;

*creating categorical variables for educ, age, and make rural urban
variables;
data work.final;
set work.combined;

*make categorical age variable agecat
```

```
   1 = 18-24
   2 = 25-34
   3 = 35-44
   4 = 45-54
   5 = 55+
;
if age ge 18 and age le 24 then agecat=1;
if age ge 25 and age le 34 then agecat=2;
if age ge 35 and age le 44 then agecat=3;
if age ge 45 and age le 54 then agecat=4;
if age ge 55 then agecat=5;
else agecate=.;


*make categorical variable for education --> educcat
      1 = < high school
      2 = high school diploma or equivalent
      3 = > high school
;
if educ = 1 then educcat=3;
if educ = 2 then educcat=3;
if educ = 3 then educcat=2;
if educ = 4 then educcat=1;
if educ = 5 then educcat=1;
if educ = 6 then educcat=1;

 *create rural/urban variables;
if popdensity ge 1000 then rural=0;
if popdensity lt 1000 then rural=1;
if popdensity =. then rural=.;


run;



*******************************************************************************
*********************************************;
*******************************************************************************
*********************************************;
***CREATE FINAL PERMANENT DATASET;
*******************************************************************************
*********************************************;
data data.final;
set work.final;
run;
*******************************************************************************
*********************************************;
*******************************************************************************
*********************************************;
*******************************************************************************
*********************************************;
*******************************************************************************
*********************************************;
```

```
*************************************************************************
***
  *** DATA CLEANING
CHECKS***********************************************

*************************************************************************
*;

proc contents data=work.statescombined;
run;

proc freq data=work.statescombined;
tables jail casanal casuai mainanal mainspuai uai1mpgt;
run;

proc freq data=work.statescombined;
tables lsrai lsurai lsiai lsuiai lsdrugs mlasthiv lshivres mdiscuss;
run;

proc freq data=work.statescombined;
tables regdr drasked tolddr drnoask;
run;

proc contents data=work.states;
run;

*** check to make sure everyone is over 18;
proc freq data=work.statescombined;
tables age;
run;

*** check the new dataset to make sure under 18 was deleted;
proc freq data=work.states;
tables age;
run;
*under 18 and missing observations with missing values for age were
deleted;

*check to make sure all male;
proc freq data=work.statescombined;
tables sex / list missing;
run;

*check to make sure all are have had sex with a man in the past 12
months;
proc freq data=work.statescombined;
tables whosex;
run;
*some have had no sex in past 12 months, deleted in cleaning step
above;
proc freq data=work.states;
tables whosex;
run;

proc freq data=work.statescombined;
tables consent;
```

```
run;
*check who consented, delete those who did not;
proc freq data=work.states;
tables consent;
run;

*check to make sure everyone had at least one male sexual partner;
proc freq data=work.statescombined;
tables nummsp;
run;
*some did not, delete these observations above;
proc freq data=work.states;
tables nummsp;
run;


*** check to make sure ethnicity was made correctly;
  proc freq data=work.states;
  tables ethnicity ethnicity*race ethnicity*hisp;
  run;

*** check to make sure all webmeet are able to be turned to numeric;
  proc freq data=work.statescombined;
  tables webmeet;
  run;

*check to make sure number of partners met on the web is not larger
than the nummsp;
proc freq data=work.states;
tables webmeetsex*nummsp;
run;

*** check jailtime to make sure in days to convert to numeric variable;
proc freq data=work.statescombined ;
tables jail ;
run;
      *** need to change the format on jail to see what the reporting
values were;

proc freq data=work.states;
tables jailtime;
run;
proc freq data=work.states;
tables jaildays;
run;
*** many values are missing because of skip pattern, if JAIL=0 (did not
got to jail), then jailtime='0';

*** check livetime to make sure in months to convert to numeric
variable;
proc freq data=work.statescombined;
tables livetime;
run;
proc freq data=work.states;
tables livetimemonths;
run;
* one guys said livetime=50311;
```

```
*some said they lived in the area whole life, convert this to age in
months;
proc freq data=work.final;
tables livetime*age;
run;


*** check to make sure character variables were converted to numeric;
proc freq data=work.final;
tables jailtime webmeetsex analfreqsex mainspsex casualmspsex
freqnoresult timestested jaildays livetimemonths;
run;


*****************************************************************;
***CHECKS FOR ZIP CODE MERGE**************************************;
*****************************************************************;

*** a row with missing values was added into the excel spreadsheet for
      to give observations with missing zipcodes a missing population
      density;


proc contents data=work.zip;
run;
*** the variable ZIPCODE is a character, needs to be numeric to merge
with other dataset;
proc contents data=work.statescombined;
run;
*** in the other dataset, the variable ZIP is numeric;


proc contents data=work.zipnumeric;
run;
*** ZIP is now numeric in both datasets and can now be merged together;


proc contents data=work.combined;
run;

*** check to make sure everyone is from MN, SC, and IA;
proc freq data=work.combined;
tables state;
run;



*****************************************************************
*****************************************;
***CHECKS FOR CATEGORICAL VARIABLES MADE FOR STATE REPORTS;
*****************************************************************
*****************************************;
proc freq data=work.final;
tables educ;
run;
```

```
proc freq data=work.final;
tables age*agecat educ*educcat;
run;
*************************************************************************
*****************************************;
*************************************************************************
*****************************************;
```

```
libname data "H:\Thesis\data\StateDataSG";

***DEDUPLICATION;
proc freq data=data.final;
tables vip;
run;
***find obs with multiple ip addresses;
proc print data=data.final;
var vip orient ethnicity timestested age educcat insur rural;
where vip= "96.24.54.81" or vip= "74.42.109.183"
or vip= "75.170.146.206" or vip= "75.72.164.29"
or vip= "75.72.164.29" or vip= "69.63.29.109" or vip= "67.224.47.132"
or vip= "67.224.47.132" or vip= "64.12.117.66" or vip= "209.56.59.230"
or vip= " 209.56.59.232" or vip= "198.175.196.254"
or vip= "174.53.153.143"or vip= "160.94.47.16" or vip= "128.255.53.72"
or vip= "128.255.53.72";
run;
*if observations are exactly the same in orientation, ethnicity, \
timestested, age, educcat, insur, and rural, then delete the
second time that person took the survey;
**after reviewing the observations, 4 were identical, deleted below;
data data.finaldeduped;
set data.final;
if obs= 187 then delete;
if obs=240 then delete;
if obs=344 then delete;
if obs=383 then delete;
run;
```

```
***proc univariate for continuous variables of interest;
proc univariate data=data.finaldeduped normal plot;
var age nummsp numfsp jaildays spbreakmain spbreakcasual nummuai;
histogram age nummsp numfsp jaildays spbreakmain spbreakcasual nummuai/
normal;
probplot age nummsp numfsp jaildays spbreakmain spbreakcasual
nummuai/normal (mu=est sigma=est);
run;

***;
proc freq data=data.finaldeduped;
tables age rural nummsp numfsp jaildays spbreakmain spbreakcasual
nummuai webmeetsex analfreqsex ;
run;
***diochotomize numfsp, use jail instead of jaildays because most
people (421) did not go to jail
in the past year because many people have none, and few have more than
none;


*** LOGIT PLOTS TO DETERMINE WHICH CONTINOUS VARIABLES SHOULD STAY
CONTINOUS;
*if the logit plots are not non-linear
***Estimated Logit
Plots**************************************************************
************************;
**********************************************************************
*****************************************;

*** Macro;
%macro logitplot(dataset,groups,outcome,contin, continame);

proc rank data=&dataset groups=&groups out=ranks;
      var &contin;
      ranks bin;
run;

proc means data=ranks noprint nway;
      class bin;
      var &outcome &contin;
      output out=bins sum(&outcome)=&outcome mean (&contin)=&contin;
run;

data bins;
      set bins;
      logit=log((&outcome+1)/(_freq_ - &outcome + 1));
run;

proc gplot data=bins;
      plot logit*&contin;
      symbol h=1.5 v=dot i=none;
      title "Estimated Logit plot of &continame for &outcome";
run;
quit;
%mend;
```

```
*Age;

%logitplot (data.final,6,hivtstlstyr,age, Age);run;
%logitplot (work.final,7,hivtstlstyr,age, Age);run;
%logitplot (work.final,8,hivtstlstyr,age, Age);run;
%logitplot (work.final,9,hivtstlstyr,age, Age);run;
*not non-linear, use as categorical in the model;


%logitplot (data.final,6,toldmd,age, Age);run;
%logitplot (work.final,7,toldmd,age, Age);run;
%logitplot (work.final,8,toldmd,age, Age);run;
%logitplot (work.final,9,toldmd,age, Age);run;
*not non-linear, use as categorical in the model;


%logitplot (data.final,6,uai1mp,age, Age);run;
%logitplot (work.final,7,uai1mp,age, Age);run;
%logitplot (work.final,8,uai1mp,age, Age);run;
%logitplot (work.final,9,uai1mp,age, Age);run;
*not non-linear, use as categorical in the model;


*NUMMSP;
%logitplot (data.final,6,hivtstlstyr,nummsp, Nummsp);run;
%logitplot (work.final,7,hivtstlstyr,nummsp, Nummsp);run;
%logitplot (work.final,8,hivtstlstyr,nummsp, Nummsp);run;
%logitplot (work.final,9,hivtstlstyr,nummsp, Nummsp);run;


%logitplot (data.final,6,toldmd,nummsp, Nummsp);run;
%logitplot (work.final,7,toldmd,nummsp, Nummsp);run;
%logitplot (work.final,8,toldmd,nummsp, Nummsp);run;
%logitplot (work.final,9,toldmd,nummsp, Nummsp);run;
*NOT VERY LINEAR;

%logitplot (data.final,6,uai1mp,nummsp, Nummsp);run;
%logitplot (work.final,7,uai1mp,nummsp, Nummsp);run;
%logitplot (work.final,8,uai1mp,nummsp, Nummsp);run;
%logitplot (work.final,9,uai1mp,nummsp, Nummsp);run;
*SOMEWHAT LINEAR, TRY IN MODELS;

*NUMFSP;
%logitplot (data.final,6,hivtstlstyr,numfsp, Numfsp);run;
%logitplot (work.final,7,hivtstlstyr,numfsp, Numfsp);run;
%logitplot (work.final,8,hivtstlstyr,numfsp, Numfsp);run;
%logitplot (work.final,9,hivtstlstyr,numfsp, Numfsp);run;


%logitplot (data.final,6,toldmd,numfsp, Numfsp);run;
%logitplot (work.final,7,toldmd,numfsp, Numfsp);run;
%logitplot (work.final,8,toldmd,numfsp, Numfsp);run;
%logitplot (work.final,9,toldmd,numfsp, Numfsp);run;


%logitplot (data.final,6,uai1mpgt,numfsp, Numfsp);run;
%logitplot (work.final,7,uai1mpgt,numfsp, Numfsp);run;
```

```
%logitplot (work.final,8,uai1mpgt,numfsp, Numfsp);run;
%logitplot (work.final,9,uai1mpgt,numfsp, Numfsp);run;
***only two points are shown on all of the graphs for numfsp,
dichotomize;


*JAILDAYS;
%logitplot (data.final,6,hivtstlstyr,jaildays, Jaildays);run;
%logitplot (work.final,7,hivtstlstyr,jaildays, Jaildays);run;
%logitplot (work.final,8,hivtstlstyr,jaildays, Jaildays);run;
%logitplot (work.final,9,hivtstlstyr,jaildays, Jaildays);run;


%logitplot (data.final,6,toldmd,jaildays, Jaildays);run;
%logitplot (work.final,7,toldmd,jaildays, Jaildays);run;
%logitplot (work.final,8,toldmd,jaildays, Jaildays);run;
%logitplot (work.final,9,toldmd,jaildays, Jaildays);run;


%logitplot (data.final,6,uai1mpgt,jaildays, Jaildays);run;
%logitplot (work.final,7,uai1mpgt,jaildays, Jaildays);run;
%logitplot (work.final,8,uai1mpgt,jaildays, Jaildays);run;
%logitplot (work.final,9,uai1mpgt,jaildays, Jaildays);run;
*only two points shown for this variable also, dichotomize;


*NUMMUAI;
%logitplot (data.final,6,hivtstlstyr,nummuai, Nummuai);run;
%logitplot (work.final,7,hivtstlstyr,nummuai, Nummuai);run;
%logitplot (work.final,8,hivtstlstyr,nummuai, Nummuai);run;
%logitplot (work.final,9,hivtstlstyr,nummuai, Nummuai);run;


%logitplot (data.final,6,toldmd,nummuai, Nummuai);run;
%logitplot (work.final,7,toldmd,nummuai, Nummuai);run;
%logitplot (work.final,8,toldmd,nummuai, Nummuai);run;
%logitplot (work.final,9,toldmd,nummuai, Nummuai);run;


%logitplot (data.final,6,uai1mpgt,nummuai, Nummuai);run;
%logitplot (work.final,7,uai1mpgt,nummuai, Nummuai);run;
%logitplot (work.final,8,uai1mpgt,nummuai, Nummuai);run;
%logitplot (work.final,9,uai1mpgt,nummuai, Nummuai);run;
*dichotomize, non-linear;


*ANALFREQSEX;
%logitplot (data.final,6,hivtstlstyr,analfreqsex, Analfreqsex);run;
%logitplot (work.final,7,hivtstlstyr,analfreqsex, Analfreqsex);run;
%logitplot (work.final,8,hivtstlstyr,analfreqsex, Analfreqsex);run;
%logitplot (work.final,9,hivtstlstyr,analfreqsex, Analfreqsex);run;


%logitplot (data.final,6,toldmd,analfreqsex, Analfreqsex);run;
%logitplot (work.final,7,toldmd,analfreqsex, Analfreqsex);run;
%logitplot (work.final,8,toldmd,analfreqsex, Analfreqsex);run;
%logitplot (work.final,9,toldmd,analfreqsex, Analfreqsex);run;
```

```
%logitplot (data.final,6,uai1mpgt,analfreqsex, Analfreqsex);run;
%logitplot (work.final,7,uai1mpgt,analfreqsex, Analfreqsex);run;
%logitplot (work.final,8,uai1mpgt,analfreqsex, Analfreqsex);run;
%logitplot (work.final,9,uai1mpgt,analfreqsex, Analfreqsex);run;
*not linear, not appropriate to keep continuous in models;


**************************************************************************
****************************************;
**************************************************************************
****************************************;
data temp;
set data.finaldeduped;
if numfsp=0 then femalesex=0;
if numfsp gt 0 then femalesex=1;
run;


proc freq data=data.finaldeduped;
tables toldmd;
run;***fix don't know;
data temp2;
set temp;
if toldmd=9 then toldmd=.;
if uai1mpgt=9 then uai1mpgt=.;
run;
proc freq data=work.temp2;
tables toldmd;
run;**don't knows were converted to missing;

**************************************************************************
************************************;
**************************************************************************
************************************;
**************************************************************************
************************************;

***MODEL1, toldmd;

*unadjusted odd ratios;
proc ttest data=temp2;
var age nummsp numfsp jaildays spbreakmain spbreakcasual nummuai
webmeetsex analfreqsex;
class toldmd;
run;

proc univariate data=data.finaldeduped;
var age;
where toldmd=1;
run;
proc univariate data=data.finaldeduped;
var age;
where toldmd=0;
run;
proc logistic data=work.temp2 descending;
```

```
model toldmd = age;
run;

proc freq data=work.temp2;
tables orient orient*toldmd;
run;
proc logistic data=work.temp2 descending;
class orient (ref='Homosexual, Gay' param=ref);
model toldmd = orient;
run;

proc freq data=work.temp2;
tables educcat*toldmd;
run;
proc logistic data=work.temp2 descending;
class educcat (ref="3" param=ref);
model toldmd=educcat;
run;

proc freq data=temp2;
tables insur insur*toldmd;
run;
proc logistic data=temp2 descending;
class insur (ref="Private" param=ref);
model toldmd = insur;
run;

proc freq data=temp2;
tables rural*toldmd;
run;
proc logistic data=work.temp2 descending;
model toldmd = rural;
run;

proc freq data=temp2;
tables uai1mpgt*toldmd;
run;
proc logistic data=work.temp2 descending;
model toldmd = uai1mpgt;
run;

proc freq data=temp2;
tables femalesex*toldmd;
run;
proc logistic data=temp2 descending;
model toldmd = femalesex;
run;

proc freq data=temp2;
tables evertest;
run;
data temp3;
set temp2;
if evertest=9 then evertest=.;
run;
proc freq data=temp3;
tables evertest*toldmd;
```

```
run;
proc logistic data=temp3 descending;
model toldmd = evertest;
run;

proc freq data=temp3;
tables hivtstlstyr;
run;
data temp4;
set temp3;
if hivtstlstyr=9 then hivtstlstyr=.;
run;
proc freq data=temp4;
tables hivtstlstyr*toldmd;
run;
proc logistic data=temp4 descending;
model toldmd = hivtstlstyr;
run;

proc freq data=temp4;
tables stdtest;
run;
data temp5;
set temp4;
if stdtest=9 then stdtest=.;
run;
proc freq data=temp5;
tables stdtest*toldmd;
run;
proc logistic data=data.final descending;
model toldmd = stdtest;
run;

Proc DataSets Lib = work;
Modify temp5;
Format hepctest hepvac;
Run ;
Quit ;
*numbering off on hepctests;
data temp6;
set temp5;
if hepctest=10511 then hepctest=0;
if hepctest=10512 then hepctest=1;
if hepctest=10853 then hepctest=9;
if hepvac=10517 then hepvac=0;
if hepvac=10518 then hepvac=1;
if hepvac=10854 then hepvac=9;
run;
proc freq data=temp6;
tables hepctest hepvac;
run;
data temp7;
set temp6;
if hepctest=9 then hepctest=.;
if hepvac=9 then hepvac=.;
if convo=9 then convo=.;
if group=10565 then group=0;
```

```
if group=10566 then group=1;
if olsex=7 then olsex=.;
if uai1mpgt=9 then uai1mpgt=.;
if orient = 2 then gay=1;  *the variable GAY was made because not
enough data in other strata for models;
if orient = 1 then gay=0;
if orient = 3 then gay=0;
if orient = 4 then gay=0;
if orient = 7 then gay=0;
if orient = . then gay=.;
if uai1mp=9 then uai1mp=.;
run;
proc freq data=temp7;
tables hepctest*toldmd hepvac*toldmd;
run;

proc logistic data=temp6 descending;
model toldmd = hepctest;
run;
proc logistic data=temp6 descending;
model toldmd = hepvac;
run;


proc freq data=temp7;
tables convo*toldmd;
run;
proc logistic data=temp7 descending;
model toldmd = convo;
run;

proc freq data=temp7;
tables GROUP*toldmd;
run;
proc logistic data=temp7 descending;
model toldmd = GROUP;
run;

proc univariate data=temp7;
var timestested;
class toldmd;
run;
proc logistic data=temp7 descending;
model toldmd = timestested;
run;

proc freq data=temp7;
tables jail*toldmd;
run;
proc logistic data=data.final descending;
model toldmd = jail;
run;

proc freq data=temp7;
tables gethigh*toldmd;
run;
proc logistic data=data.final descending;
```

```
model toldmd = gethigh;
run;

proc freq data=temp7;
tables highsex*toldmd;
run;
proc logistic data=data.final descending;
model toldmd = highsex;
run;

proc freq data=temp7;
tables olsex*toldmd;
run;
proc logistic data=data.final descending;
model toldmd = olsex;
run;


proc freq data=temp7;
tables educcat orient;
run;



***FULL MODEL FOR ADJUSTED ORS;
proc logistic data=temp7 descending;
class educcat (ref='3' param=ref);
class insur (ref="Private" param=ref);

model toldmd= AGE EDUCCAT gay RURAL INSUR UAI1MPGT
FEMALESEX EVERTEST HIVTSTLSTYR STDTEST HEPVAC HEPCTEST CONVO GROUP
TIMESTESTED JAIL GETHIGH HIGHSEX OLSEX;
run;




*backward elimination, remove variables with no p-value available
first;
*Full model with all variables;
proc logistic data=temp7 descending;
class educcat (ref='3' param=ref);
class insur (ref="Private" param=ref);

model toldmd= AGE EDUCCAT gay RURAL INSUR UAI1MPGT
FEMALESEX EVERTEST HIVTSTLSTYR STDTEST HEPVAC HEPCTEST CONVO GROUP
TIMESTESTED JAIL GETHIGH HIGHSEX OLSEX;
run;

*drop highsex, gethigh, and convo, no p-values available;
proc logistic data=temp7 descending;
class educcat (ref='3' param=ref);
class insur (ref="Private" param=ref);

model toldmd= AGE EDUCCAT gay RURAL INSUR UAI1MPGT
FEMALESEX EVERTEST HIVTSTLSTYR STDTEST HEPVAC HEPCTEST GROUP
TIMESTESTED JAIL OLSEX;
```

```
run;

*femalesex least significant, drop;
proc logistic data=temp7 descending;
class educcat (ref='3' param=ref);
class insur (ref="Private" param=ref);

model toldmd= AGE EDUCCAT gay RURAL INSUR UAI1MPGT EVERTEST HIVTSTLSTYR
STDTEST HEPVAC HEPCTEST GROUP TIMESTESTED JAIL OLSEX;
run;

*gay least significant, drop;
proc logistic data=temp7 descending;
class educcat (ref='3' param=ref);
class insur (ref="Private" param=ref);

model toldmd= AGE EDUCCAT RURAL INSUR UAI1MPGT EVERTEST HIVTSTLSTYR
STDTEST HEPVAC HEPCTEST GROUP TIMESTESTED JAIL OLSEX;
run;

*jail least significant, drop;
proc logistic data=temp7 descending;
class educcat (ref='3' param=ref);
class insur (ref="Private" param=ref);

model toldmd= AGE EDUCCAT RURAL INSUR UAI1MPGT EVERTEST HIVTSTLSTYR
STDTEST HEPVAC HEPCTEST GROUP TIMESTESTED OLSEX;
run;

*group least significant, drop;
proc logistic data=temp7 descending;
class educcat (ref='3' param=ref);
class insur (ref="Private" param=ref);

model toldmd= AGE EDUCCAT RURAL INSUR UAI1MPGT EVERTEST HIVTSTLSTYR
STDTEST HEPVAC HEPCTEST TIMESTESTED OLSEX;
run;

*timestested least significant, drop;
proc logistic data=temp7 descending;
class educcat (ref='3' param=ref);
class insur (ref="Private" param=ref);

model toldmd= AGE EDUCCAT RURAL INSUR UAI1MPGT EVERTEST HIVTSTLSTYR
STDTEST HEPVAC HEPCTEST OLSEX;
run;

*hivtstlstyr least significant, drop;
proc logistic data=temp7 descending;
class educcat (ref='3' param=ref);
class insur (ref="Private" param=ref);

model toldmd= AGE EDUCCAT RURAL INSUR UAI1MPGT EVERTEST STDTEST HEPVAC
HEPCTEST OLSEX;
run;

*olsex least significant, drop;
```

```
proc logistic data=temp7 descending;
class educcat (ref='3' param=ref);
class insur (ref="Private" param=ref);

model toldmd= AGE EDUCCAT RURAL INSUR UAI1MPGT EVERTEST STDTEST HEPVAC
HEPCTEST;
run;

*hepvac least significant, drop;
proc logistic data=temp7 descending;
class educcat (ref='3' param=ref);
class insur (ref="Private" param=ref);

model toldmd= AGE EDUCCAT RURAL INSUR UAI1MPGT EVERTEST STDTEST
HEPCTEST;
run;

*stdtest least significant, drop;
proc logistic data=temp7 descending;
class insur (ref="Private" param=ref);

model toldmd= AGE RURAL INSUR UAI1MPGT EVERTEST HEPCTEST;
run;

*insur least significant, drop;
proc logistic data=temp7 descending;

model toldmd= AGE RURAL UAI1MPGT EVERTEST HEPCTEST;
run;

*educcat least significant, drop;
proc logistic data=temp7 descending;
class educcat (ref='3' param=ref);
class insur (ref="Private" param=ref);

model toldmd= AGE RURAL INSUR UAI1MPGT EVERTEST HEPCTEST;
run;

*insur least significant, drop;
proc logistic data=temp7 descending;
class educcat (ref='3' param=ref);
class insur (ref="Private" param=ref);

model toldmd= AGE RURAL UAI1MPGT EVERTEST HEPCTEST;
run;
*everything in this model is significant!;


*test for interaction;
proc logistic data=temp7 descending;
class educcat (ref='3' param=ref);
class insur (ref="Private" param=ref);

model toldmd= AGE RURAL UAI1MPGT EVERTEST HEPCTEST
AGE|RURAL|UAI1MPGT|EVERTEST|HEPCTEST;
run;
*no interaction;
```

```
**********************************************************************
************************************;
**********************************************************************
************************************;

**test for collinearity;


**********************************************************************
************************************;
**********************************************************************
************************************;
**********************************************************************
************************************;
**********************************************************************
************************************;
*COLLIN MACRO;

 OPTIONS MPRINT SYMBOLGEN;


* COLLINEARITY DIAGNOSTICS USING THE INFORMATION MATRIX;
* MACRO FROM SAS-L BY MATHEW ZACK;
* Modified 26 April 2005 by Jim Singleton to handle covariates included
in class statement;
*INCLUDES CODE FOR GENMOD:;
* INCLUDE THE FOLLOWING CODE IN THE GENMOD PROCEDURE:;

* IF REPEATED IS NOT USED (UNCLUSTERED DATA) THEN ADD THE FOLLOWING TWO
STATEMENTS.;
* ALSO ADD COVB TO THE MODEL STATEMENT (MODEL / COVB);
*MAKE 'PARMINFO' OUT = DATASETNAME1;
*MAKE 'COV' OUT = DATASETNAME2;
* IF REPEATED IS USED FOR CLUSTER SAMPLES THEN ADD THE FOLLOWING TWO
STATEMENTS.;
* ALSO ADD COVB TO THE REPEATED STATEMENT (REPEATED / COVB);
*MAKE 'PARMINFO' OUT = DATASETNAME1;
*MAKE 'GEERCOV' OUT = DATASETNAME2;


* IF USING GENMOD THEN SET PROCDR=GENMOD IN THE MACRO CALL;
* IF USING GENMOD THEN SET PARMINFO=DATA SET:;
*    %COLLIN(COVDSN=DATASETNAME2, PROCDR=GENMOD,
PARMINFO=DATASETNAME1);

* IF USING LOGISTIC OR PHREG THEN LEAVE THE SECOND AND THIRD PARAMETERS
BLANK:;
*    %COLLIN(COVDSN=DATASETNAME, PROCDR=, PARMINFO=);


%MACRO COLLIN(COVDSN=, PROCDR=, PARMINFO=);

%* MACRO TO CALCULATE COLLINEARITY DIAGNOSTICS FROM ;
%*  VARIANCE-COVARIANCE MATRIX IN NONLINEAR REGRESSION;
```

```
%* REF: DAVIS CE, HYDE JE, BANGDIWALA SI, NELSON JJ.;
%*       AN EXAMPLE OF DEPENDENCIES AMONG VARIABLES IN A;
%*       CONDITIONAL LOGISTIC REGRESSION.  IN: MOOLGAVKAR SH,;
%*       PRENTICE RL, EDS.  MODERN STATISTICAL METHODS IN;
%*       CHRONIC DISEASE EPIDEMIOLOGY.  NEW YORK:;
%*       JOHN WILEY & SONS, INC., 1986:140-7.;

%* IN YOUR NONLINEAR REGRESSION PROGRAM (PROC LOGISTIC OR  ;
%*  PROC PHREG), SPECIFY THE COVOUT AND THE OUTEST=SASDSN ;
%*  OPTIONS IN THE PROC STATEMENT.  THEN, SPECIFY THE SAS DATA SET;
%*  (SASDSN) IN THE MACRO VARIABLE, COVDSN, WHEN YOU INVOKE THIS
MACRO.;



%* MAKE GENMOD COVARIANCE OUTPUT SIMILAR ENOUGH TO LOGISTIC AND PHREG
THAT THIS MACRO WILL
%* WORK.;

%IF &PROCDR=GENMOD %THEN %DO;

%* FOR SOME INEXPLICABLE REASON, SAS DOES NOT RECORD THE VARIABLE NAMES
IN THE OUTPUT;
%* VARIANCE-COVARIANCE DATA SET. THIS NEXT SECTION OF CODE REPLACES THE
PARM VARIABLE;
%* WITH THE NAMES OF THE VARIABLES AND RENAMES PARM TO _NAME_ TO
CONFORM TO THE OUTPUT;
%* DATA SETS GENERATED BY LOGISTIC AND GENMOD.;

%* IF THERE ARE MORE THAN 9 VARIABLES IN THE MODEL STATEMENT, SAS WILL
STOP PROCESSING;
%* ON THE DATA NEXT_2 STEP DECLARING THE BY VARIABLE (PARM) IS NOT IN
THE CORRECT SORTED;
%* ORDER. THIS DOESNT HAPPEN FOR LESS THAN NINE VARIABLES. WHEN YOU
SORT THE DATA SET;
%* ON PARM, THE SORT DOES NOT TAKE PLACE AS EXPECTED, MESSING UP THE
VARIANCE-COVARIANCE;
%* MATRIX. THE PROBLEM IS THAT THE VALUES OF PARM PROGRESS AS PARM1,
PARM2, PARM3, ...;
%* PARM9, PARM10, ETC. WHEN YOU SORT ON PARM, PARM10, PARM11 THROUGH
PARM19 SORT AFTER;
%* PARM1 AND BEFORE PARM2, DUE TO THE WAY SORTING WORKS ON CHARACTER
VARIABLES. THE ONLY;
%* WAY TO FIX THIS IS TO RENAME THE VARIABLES TO PARM01, PARM02, ETC.
SO THE SORTING WORKS;
%* CORRECTLY.;


DATA NEXT_1; SET &PARMINFO;
ATTRIB PARNUM FORMAT=$12.;
PARNUM=PARAMETER;
IF PARNUM = 'Prm1' THEN PARNUM = 'Prm01';
IF PARNUM = 'Prm2' THEN PARNUM = 'Prm02';
IF PARNUM = 'Prm3' THEN PARNUM = 'Prm03';
IF PARNUM = 'Prm4' THEN PARNUM = 'Prm04';
IF PARNUM = 'Prm5' THEN PARNUM = 'Prm05';
```

```
IF PARNUM = 'Prm6' THEN PARNUM = 'Prm06';
IF PARNUM = 'Prm7' THEN PARNUM = 'Prm07';
IF PARNUM = 'Prm8' THEN PARNUM = 'Prm08';
IF PARNUM = 'Prm9' THEN PARNUM = 'Prm09';

RENAME PARNUM=PARM;

RUN;
PROC SORT;
 BY PARM;
RUN;

DATA NEXT_1A; SET &COVDSN;
ATTRIB PARM FORMAT=$12.;
PARM=ROWNAME;
IF PARM = 'Prm1' THEN PARM = 'Prm01';
IF PARM = 'Prm2' THEN PARM = 'Prm02';
IF PARM = 'Prm3' THEN PARM = 'Prm03';
IF PARM = 'Prm4' THEN PARM = 'Prm04';
IF PARM = 'Prm5' THEN PARM = 'Prm05';
IF PARM = 'Prm6' THEN PARM = 'Prm06';
IF PARM = 'Prm7' THEN PARM = 'Prm07';
IF PARM = 'Prm8' THEN PARM = 'Prm08';
IF PARM = 'Prm9' THEN PARM = 'Prm09';

RUN;
PROC SORT;
 BY PARM;
RUN;

DATA NEXT_2(DROP=EFFECT); MERGE NEXT_1A(IN=IN1A) NEXT_1(IN=IN1); BY
PARM; IF IN1A;
PARM=EFFECT;
RENAME PARM=_NAME_;
RUN;

   %* IN SOME OUTPUT VARIANCE-COVARIANCE MATRICES, THERE WILL BE A
RECORD FOR;
   %* SCALE. DELETE THIS RECORD.;
   DATA NEXT_3; SET NEXT_2;
   IF _NAME_='SCALE' THEN DELETE;
   RUN;
   %* INSERT A DUMMY RECORD FOR ESTIMATE TO SIMULATE COVARIANCE OUTPUT
FROM LOGISTIC
   %*  AND PHREG.;
   DATA NEXT_4;
   _NAME_= 'ESTIMATE';
   OUTPUT;
   RUN;
   DATA NEXT_5; SET NEXT_4 NEXT_3;

   RUN;
proc print; run;


%END;
  %ELSE %DO;
```

```
   DATA NEXT_5; SET &COVDSN;
   RUN;
%END;
proc print data=next_5; run;

%IF (NEXT_5 NE ) %THEN %DO;

OPTION MPRINT;

%LET __STOP=0;

PROC IML;
  USE NEXT_5;
  READ ALL VAR {_NAME_} INTO _VARNAME;

  _NRVNAME=NROW(_VARNAME);


  IF (_NRVNAME>1) THEN DO;
     _VARNAM2=_VARNAME(|2:_NRVNAME, |);
     NMISSING=J(NROW(_VARNAM2),1,.);
     LABELS={"EIGENVAL","CONDINDX","         "};
     _VARNAM2=LABELS//_VARNAM2;
     FREE _VARNAME LABELS;
     READ ALL VAR _NUM_ INTO VARCOV(|COLNAME=_NVNAME|);
     _NRCVC=NCOL(VARCOV);
     LASTVNAM=_NVNAME(|1,_NRCVC|);
     IF (LASTVNAM="_LNLIKE_") THEN VARCOV2=VARCOV(|2:_NRVNAME,1:_NRCVC-
1|);
     IF (LASTVNAM^="_LNLIKE_") THEN VARCOV2=VARCOV(|2:_NRVNAME,|);

%* IF COVARIANCE MATRIX IS FROM PROC GENMOD USING THE REPEATED MEASURES
DESIGN;
%* THEN THE LOWER DIAGONAL WILL HAVE THE CORRELATIONS AND THE UPPER
DIAGONAL WILL HAVE;
%* THE COVARIANCES. THIS NEXT SECTION OF CODE REPLACES THE LOWER
DIAGONAL WITH THE UPPER;
%* DIAGONAL TO MAKE A SYMMETRIC COVARIANCE MATRIX. IF THE MATRIX IS
SYMMETRICAL ALREADY;
%* THEN THE NEXT SECTION OF CODE WILL NOT AFFECT ANYTHING.;


        VC2_C = NCOL(VARCOV2);
        VC2_R = NROW(VARCOV2);
        DO CL=1 TO VC2_C;
           DO RW=1 TO VC2_R;
              VARCOV2(|RW,CL|) = VARCOV2(|CL,RW|);
           END;
        END;

%* PRINT THE VARIANCE-COVARIANCE MATRIX FOR DIAGNOSTIC PURPOSES;
      PRINT VARCOV2;

     FREE VARCOV _NRCVC LASTVNAM VC2_C VC2_R CL;
     COVBINV=INV(VARCOV2);
     SCALE=INV(SQRT(DIAG(COVBINV)));
```

```
     R=SCALE*COVBINV*SCALE;
     FREE COVBINV SCALE;
     CALL EIGEN(MUSQR,V,R);
     FREE R;
     SROOTMUS=SQRT(MUSQR);
     CI=1/(SROOTMUS/MAX(SROOTMUS));
     PHI=(V##2)*DIAG(MUSQR##(-1));
     SUMPHI=PHI(|,+|);
     PI=PHI#(SUMPHI##(-1));
     FREE PHI SUMPHI SROOTMUS V;
     FINAL=(MUSQR||CI||NMISSING||PI`)`;
     FREE PI MUSQR CI NMISSING;
     _NCFINAL=NCOL(FINAL);
     _NRFINAL=NROW(FINAL);
     FINAL2=J(_NRFINAL,_NCFINAL,0);
     _NCFP1=_NCFINAL+1;
     __VDP="VDP";
     DO I=1 TO _NCFINAL;
        FINAL2(|,_NCFP1-I|)=FINAL(|,I|);
        X=CHAR(I,3);
        Y=COMPRESS(CONCAT(__VDP,X));
        IF I=1 THEN _VDPNAME=Y;
           ELSE _VDPNAME=_VDPNAME||Y;
     END;
     FREE FINAL _NRFINAL _NCFINAL I X Y;
     CREATE FINAL2 FROM FINAL2(|ROWNAME=_VARNAM2 COLNAME=_VDPNAME|);
     APPEND FROM FINAL2(|ROWNAME=_VARNAM2|);
     FREE _VARNAM2 _VDPNAME FINAL2;
  END;
  IF (_NRVNAME=1) THEN DO;
     X="1";
     CALL SYMPUT("__STOP",LEFT(X));
     PRINT " ";
     PRINT
"*********************************************************";
     PRINT "YOU NEED TO SPECIFY THE  COVOUT  OPTION";
     PRINT " IN EITHER PROC LOGISTIC OR PROC PHREG.";
     PRINT " THIS PROGRAM WILL NOT CALCULATE COLLINEARITY
DIAGNOSTICS.";
     PRINT
"*********************************************************";
     PRINT " ";
  END;
  QUIT;
RUN;

%IF (&__STOP EQ 0) %THEN %DO;
   PROC PRINT DATA=FINAL2 LABEL NOOBS;
     ID _VARNAM2;
     TITLE8 "COLLINEARITY DIAGNOSTICS FOR NONLINEAR MODELS USING";
     TITLE9 "THE INFORMATION MATRIX:  EIGENVALUES, CONDITION INDEXES,";
     TITLE10 "AND VARIANCE DECOMPOSITION PROPORTIONS (VDP'S)";
     LABEL _VARNAM2="VARIABLE";
   RUN;
%END;

%END;
```

```
%ELSE %DO;
   %PUT;
   %PUT "*******************************************************";
   %PUT "WHEN YOU INVOKE THIS MACRO, YOU HAVE TO SPECIFY THE NAME";
   %PUT " OF A SAS DATA SET THAT CONTAINS THE VARIANCE-COVARIANCE";
   %PUT " MATRIX FROM EITHER PROC LOGISTIC OR PROC PHREG.";
   %PUT;
   %PUT "YOU CAN CREATE THIS MATRIX BY INCLUDING THE FOLLOWING
OPTIONS";
   %PUT " ON THE PROC STATEMENT:  COVOUT  AND  OUTEST=SASDSN,";
   %PUT " WHERE SASDSN IS THE NAME OF THE SAS DATA SET CONTAINING";
   %PUT " THE VARIANCE-COVARIANCE MATRIX.";
   %PUT "*******************************************************";
   %PUT;
%END;

PROC DATASETS;
DELETE NEXT_1 NEXT_1A NEXT_2 NEXT_3 NEXT_4 NEXT_5;
RUN;
QUIT;


%MEND COLLIN;


*************************************************************************
************************************;
*************************************************************************
************************************;
*************************************************************************
************************************;
*************************************************************************
************************************;

proc logistic data=temp7 covout outest=info descending;
class educcat (ref='3' param=ref);
class insur (ref="Private" param=ref);

model toldmd= AGE RURAL UAI1MPGT EVERTEST HEPCTEST;
run;

%collin (covdsn=info);
run;
*no collinearity, no conditional index above 30;


***FINAL MODEL FOR TOLDMD;
proc logistic data=temp7 descending;
class educcat (ref='3' param=ref);
class insur (ref="Private" param=ref);

model toldmd= AGE RURAL UAI1MPGT EVERTEST HEPCTEST;
run;
```

```
*************************************************************************
************************************;
*************************************************************************
************************************;
*************************************************************************
************************************;
*************************************************************************
************************************;

***MODEL2, hivtstlstyr;

*unadjusted ORs;
proc univariate data=temp7;
var age;
class hivtstlstyr;
run;
proc logistic data=temp7 descending;
model hivtstlstyr = age;
run;

proc freq data=temp7;
tables educcat*hivtstlstyr;
run;
proc logistic data=temp7 descending;
class educcat (ref="3" param=ref);
model hivtstlstyr = educcat;
run;

proc freq data=temp7;
tables rural*hivtstlstyr;
run;
proc logistic data=temp7 descending;
model hivtstlstyr = rural;
run;

proc logistic data=temp2 descending;
class insur (ref="Private" param=ref);
model toldmd = insur;
run;

proc freq data=temp7;
tables orient*hivtstlstyr;
run;
proc logistic data=temp7 descending;
class orient (ref="Homosexual, Gay" param=ref);
model hivtstlstyr = orient;
run;


proc freq data=temp7;
tables insur*hivtstlstyr;
run;
proc logistic data=temp7 descending;
class insur (ref="Private" param=ref);
model hivtstlstyr = insur;
run;
```

```
proc freq data=temp7;
tables uai1mpgt*hivtstlstyr;
run;
proc logistic data=temp7 descending;
model hivtstlstyr = uai1mpgt;
run;

proc freq data=temp7;
tables femalesex*hivtstlstyr;
run;
proc logistic data=temp7 descending;
model hivtstlstyr = femalesex;
run;

proc freq data=temp7;
tables stdtest*hivtstlstyr;
run;
proc logistic data=temp7 descending;
model hivtstlstyr=stdtest;
run;

proc freq data=temp7;
tables hepvac*hivtstlstyr;
run;
proc logistic data=temp7 descending;
model hivtstlstyr=hepvac;
run;

proc freq data=temp7;
tables hepctest*hivtstlstyr;
run;
proc logistic data=temp7 descending;
model hivtstlstyr=hepctest;
run;

proc freq data=temp7;
tables convo*hivtstlstyr;
run;
proc logistic data=temp7 descending;
model hivtstlstyr=convo;
run;


proc logistic data=temp7 descending;
model hivtstlstyr = group;
run;

proc freq data=temp7;
tables jail*hivtstlstyr;
run;
proc logistic data=temp7 descending;
model hivtstlstyr=jail;
run;


proc freq data=temp7;
tables gethigh*hivtstlstyr;
```

```
run;
proc logistic data=temp8 descending;
model hivtstlstyr=gethigh;
run;


proc freq data=temp7;
tables highsex*hivtstlstyr;
run;
proc logistic data=temp7 descending;
model hivtstlstyr=highsex;
run;


proc freq data=temp7;
tables olsex*hivtstlstyr;
run;
proc logistic data=temp7 descending;
model hivtstlstyr=olsex;
run;



***FULL MODEL;
proc logistic data=temp7 descending;
class educcat (ref='3' param=ref);
class insur (ref="Private" param=ref);

model hivtstlstyr=
AGE EDUCCAT gay RURAL INSUR UAI1MPGT FEMALESEX STDTEST HEPVAC
HEPCTEST CONVO GROUP JAIL GETHIGH HIGHSEX OLSEX;

run;

*drop in this order from backward elimination:

GETHIGH HIGHSEX FEMALESEX AGE INSUR HEPVAC RURAL JAIL GROUP gay
UAI1MPGT OLSEX CONVO EDUCCAT;

***rEduced model;
proc logistic data=temp7 descending;
class educcat (ref='3' param=ref);

model hivtstlstyr=
  STDTEST HEPCTEST;

run;
**all vars are now significant;

*test for interaction;
proc logistic data=temp7 covout outest=info descending;

model hivtstlstyr=
STDTEST
HEPCTEST
hepctest*stdtest;
```

```
run;
*there is significant interaction between the two variables in the
model;


*test for collinearity;
%collin (covdsn=info);
run;
*no collinearity;


***FINAL MODEL FOR HIVTSTLSTYR;
proc logistic data=temp7 descending;

model hivtstlstyr=
STDTEST
HEPCTEST
hepctest*stdtest;

run;


***use oddratio statement to get odds ratios;
***FINAL MODEL FOR HIVTSTLSTYR;
proc logistic data=temp7 descending;
class hepctest;
model hivtstlstyr=
STDTEST
HEPCTEST
hepctest*stdtest;
oddsratio stdtest;

run;

proc logistic data=temp7 descending;
class stdtest;
model hivtstlstyr=
STDTEST
HEPCTEST
hepctest*stdtest;
oddsratio hepctest;

run;


proc logistic data=temp7 descending;
model hivtstlstyr=stdtest;
where hepctest=1;
run;

proc logistic data=temp7 descending;
model hivtstlstyr=stdtest;
where hepctest=0;
run;


proc freq data=temp7;
```

```
tables STDTEST*hivtstlstyr;
where HEPCTEST=0;
run;

proc freq data=temp7;
tables STDTEST*hivtstlstyr;
where HEPCTEST=1;
run;

**since there is interaction, contrast statements are needed for the
ODD ratios;

proc logistic data=temp7 descending;

model hivtstlstyr=
STDTEST
HEPCTEST
hepctest*stdtest;

contrast "STDTEST Y HEPCTEST Y - N" STDTEST 1 HEPCTEST 0 /
ESTIMATE=EXP;
contrast "HEPCTEST Y STDTEST Y-N" HEPCTEST 1 STDTEST 0 / ESTIMATE =
EXP;
contrast "HEPCTEST Y STDTEST Y-N" HEPCTEST 1 STDTEST 1 / ESTIMATE =
EXP;
contrast "HEPCTEST Y STDTEST Y-N" HEPCTEST 0 STDTEST 0 / ESTIMATE =
EXP;
run;


***MODEL 3 UAI1MP;
*UNADJUSTED OR's;

proc univariate data=temp7;
class uai1mp;
var age;
run;
proc logistic data=temp7 descending;
model uai1mp = age;
run;

proc freq data=temp7;
tables educcat*uai1mp;
run;
proc logistic data=temp7 descending;
class educcat (ref="3" param=ref);
model uai1mp = educcat;
run;

proc freq data=temp7;
tables gay*uai1mp;
run;
proc logistic data=temp7 descending;
class gay (ref="Homosexual, Gay" param=ref);
model uai1mp = orient;
run;
```

```
proc freq data=temp7;
tables rural*uai1mp;
run;
proc logistic data=temp7 descending;
model uai1mp = rural;
run;

proc freq data=temp7;
tables insur*uai1mp;
run;
proc logistic data=temp7 descending;
class insur (ref="Private" param=ref);
model uai1mp = insur;
run;


proc freq data=temp7;
tables femalesex*uai1mp;
run;
proc logistic data=temp7 descending;
model uai1mp = femalesex;
run;

proc freq data=temp7;
tables evertest*uai1mp;
run;
proc logistic data=temp7 descending;
model uai1mp = evertest;
run;

proc freq data=temp7;
tables hivtstlstyr*uai1mp;
run;
proc logistic data=temp7 descending;
model uai1mp = hivtstlstyr;
run;


proc freq data=temp7;
tables stdtest*uai1mp;
run;
proc logistic data=temp7 descending;
model uai1mp = stdtest;
run;

proc freq data=temp7;
tables hepvac*uai1mp;
run;
proc logistic data=temp7 descending;
model uai1mp = hepvac;
run;


proc freq data=temp7;
tables hepctest*uai1mp;
run;
proc logistic data=temp7 descending;
```

```
model uai1mp = hepctest;
run;

proc freq data=temp7;
tables convo*uai1mp;
run;
proc logistic data=temp7 descending;
model uai1mp = convo;
run;

proc freq data=temp7;
tables group*uai1mp;
run;
proc logistic data=temp7 descending;
model uai1mp = group;
run;

proc freq data=temp7;
tables jail*uai1mp;
run;
proc logistic data=temp7 descending;
model uai1mp = jail;
run;


proc freq data=temp7;
tables gethigh*uai1mp;
run;
proc logistic data=temp7 descending;
model uai1mp = gethigh;
run;

proc freq data=temp7;
tables highsex*uai1mp;
run;
proc logistic data=temp7 descending;
model uai1mp = highsex;
run;

proc freq data=temp7;
tables olsex*uai1mp;
run;
proc logistic data=temp7 descending;
model uai1mp = olsex;
run;


proc univariate data=temp7;
class uai1mp;
var timestested;
run;
proc logistic data=temp7 descending;
model uai1mp=timestested;
run;

proc univariate data=temp7;
class uai1mp;
```

```
var nummsp;
run;
proc logistic data=temp7 descending;
model uai1mp = nummsp;
run;




***FULL MODEL;
proc logistic data=temp7 descending;
class educcat (ref='1' param=ref);
class insur (ref="Private" param=ref);

model UAI1MP=
AGE EDUCCAT gay RURAL INSUR FEMALESEX
EVERTEST HIVTSTLSTYR STDTEST HEPVAC HEPCTEST CONVO
GROUP JAIL GETHIGH HIGHSEX OLSEX TIMESTESTED NUMMSP;
run;

*BACKWARD ELIMINATION, ELIMINATE IN THIS ORDER:
GETHIGH,  STDTEST, EDUCCAT, HIVTSTLSTYR, JAIL, TIMESTESTED, FEMALESEX,
HEPVAC, EVERTEST, INSUR,
NUMMSP, GAY, CONVO, HEPCTEST;
;

proc logistic data=temp7 descending;

model UAI1MP=
AGE RURAL
GROUP HIGHSEX OLSEX;
run;

*test for interaction;

proc logistic data=temp7 descending;

model UAI1MP=
AGE RURAL GROUP HIGHSEX OLSEX
AGE|RURAL|GROUP|HIGHSEX|OLSEX;
run;

*age*group is significant, put it in the model and see what happens;

proc logistic data=temp7 descending;

model UAI1MP=
AGE RURAL GROUP HIGHSEX OLSEX
AGE*group;
run;
*when in the model on its own, this interaction term is no longer
significant, drop it;


proc logistic data=temp7 covout outest=info descending;
```

```
model UAI1MP=
 FEMALESEX
    HEPCTEST CONVO
    OLSEX  ;
run;

*remove JAIL, TIMESTESTED, AGE, gay, EDUCCAT, iNSUR, RURAL, STD, TEST,
HEPVAC, GROUP, GETHIGH, HIVTSTLSTYR, HIGHSEX, NUMMSP, EVERTEST



**test for collinearity;

*test for interaction;
proc logistic data=temp7 covout outest=info descending;

model UAI1MP=  FEMALESEX
    HEPCTEST CONVO
    OLSEX
 FEMALESEX|HEPCTEST|CONVO|OLSEX  ;
run;

*no significant interaction;

*test for collinearity;
%collin (covdsn=info);
run;
**collinearity between convo and the intercept,
meaning that highsex is a constant, is not needed in the model,
however, we do not drop this variable because it is different
from the intercept, you need at least 2
VDPs that are high that are related to 2 different variables,
not a variable and the intercept to deduce collinearity
between two variables. --> see Kleinbaum notes on
collinearity;


*FINAL MODEL FOR UAI1MP;
proc logistic data=temp7 covout outest=info descending;

model UAI1MP=  FEMALESEX
    HEPCTEST CONVO
    OLSEX  ;
run;




proc freq data=temp7;
tables stdtest;
where state="SC";
run;


data data.finalstate;
```

```
set temp7;
run;

data data.sc;
set temp7;
if state="SC";
run;

data data.ia;
set temp7;
if state="IA";
run;

data data.mn;
set temp7;
if state="MN";
run;
```

APPENDIX C
State Report – Iowa

Table 1: Number and percentage of participants by selected characteristics: Men Who Have Sex with Men, Iowa

Characteristic	No.	(%)
Race/Ethnicity		
White, non-Hispanic	163	89
Black, non-Hispanic	4	2
Hispanic	4	2
Asian/Pacific Islander	3	1
American Indian/Alaska Native	1	1
Multiracial	8	4
Other	0	0
Age group (yrs)		
18-24	69	38
25-34	46	25
35-44	33	18
45-54	27	15
>= 55	8	4
Education		
<High School	5	3
High School diploma or equivalent	32	17
> High School	146	80
Sexual Identity		
Homosexual	150	82
Bisexual	27	15
Heterosexual	1	1
Other	5	3
Health Insurance		
Private	99	54
Public	30	16
None	36	20
Don’t know	18	10
Rural vs Urban		
Rural	67	38
Urban	111	62

Table 2: Number and percentage of participants reporting having been tested for HIV by selected characteristics, Iowa

Characteristic	Tested	
	Ever	Preceding 12 Months
Race/Ethnicity		
White, non-Hispanic	123 (76)	79 (50)
Black, non-Hispanic	3 (75)	2 (50)
Hispanic	1 (25)	1 (25)
Asian/Pacific Islander	0 (0)	0 (0)
American Indian/Alaska Native	0 (0)	0 (0)
Multiracial	7 (100)	5 (71)
Other	-	-
Age group (yrs)		
18-24	35 (52)	26 (29)
25-34	34 (77)	25 (57)
35-44	30 (91)	16 (52)
45-54	27 (100)	14 (52)
>= 55	8 (100)	6 (75)
Education		
<High School	2 (40)	1 (20)
High School diploma or equivalent	20 (65)	13 (43)
> High School	112 (78)	73 (51)
Sexual Identity		
Homosexual	118 (80)	74 (51)
Bisexual	14 (54)	11 (42)
Heterosexual	0 (0)	0 (0)
Other	2 (40)	2 (40)
Health Insurance		
Private	76 (78)	52 (54)
Public	24 (80)	16 (57)
None	25 (71)	13 (37)
Don’t know	9 (50)	6 (35)
Rural vs Urban		
Rural	79 (73)	49 (46)
Urban	52 (78)	35 (53)
Total	134 (74)	87 (49)

Table 3: Number and percentage of facility types reported as the most recent place of HIV testing , Iowa

Facility Type	**No.**	**(%)**
Private doctor's office	37	28
Public health clinic or community health center	47	35
HIV counseling and testing program	21	16
HIV/AIDS street outreach	7	5
Hospital	7	5
Emergency room	2	2
Sexually Transmitted disease clinic	2	2
Blood bank/ Plasma center	2	2
Military	12	1
At home	2	2
Other	5	4

Table 4: Number and percentage of reasons for participants not being tested for HIV in the past 12 months, Iowa

Reason Reported	A reason No. (%)	Main Reason No. (%)
Haven't done anything to get HIV	23 (13)	9 (28)
Afraid of finding out infected with HIV	11 (6)	0 (0)
Don't know where to go	19 (10)	4 (13)
Couldn't get transportation	3 (2)	0 (0)
Don't like needles	6 (3)	2 (6)
Worried name would be reported to the government	10 (5)	1 (3)
Worried someone would find out about the test result	10 (5)	3 (9)
Afraid of losing job, insurance, housing, family or friends if positive	5 (3)	1 (3)
Didn't have time	11 (6)	1 (3)
Didn't have money or insurance	15 (8)	7 (22)
Other	9 (5)	4 (13)

Table 5: Number and percentage of participants reporting having had anal sex with a main or casual male partner during the preceding 12 months by selected characteristics, Iowa

Characteristic	Main Partner		Casual Partner	
	Anal sex	Unprotected anal sex*	Anal sex	Unprotected anal sex*
	No. (%)	No. (%)	No. (%)	No. (%)
Race/Ethnicity				
White, non-Hispanic	97 (77)	68 (72)	99 (69)	57 (60)
Black, non-Hispanic	2 (50)	1 (50)	2 (50)	0 (0)
Hispanic	2 (67)	2 (100)	1 (25)	0 (0)
Asian/Pacific Islander	2 (67)	1 (50)	2 (100)	1 (50)
American Indian/Alaska Native	0 (0)	0 (0)	1 (100)	0 (0)
Multiracial	8 (100)	7 (88)	3 (43)	2 (67)
Other	-	-	-	-
Age group (yrs)				
18-24	40 (74)	28 (72)	42 (67)	19 (49)
25-34	30 (77)	25 (83)	27 (64)	17 (63)
35-44	23 (88)	14 (63)	15 (58)	9 (64)
45-54	15 (71)	11 (73)	18 (75)	12 (67)
>= 55	3 (60)	1 (33)	6 (86)	3 (50)
Education				
<High School	5 (100)	5 (100)	3 (75)	2 (67)
High School diploma or equivalent	15 (68)	9 (69)	16 (59)	11 (79)
> High School	91 (77)	65 (71)	89 (68)	47 (54)
Sexual Identity				
Homosexual	98 (81)	74 (76)	90 (67)	53 (61)
Bisexual	12 (55)	4 (36)	14 (63)	5 (38)
Heterosexual	0 (0)	0 (0)	1 (100)	1 (100)
Other	1 (50)	1 (100)	3 (60)	1 (33)
Health Insurance				
Private	64 (80)	44 (69)	55 (64)	27 (50)
Public	15 (68)	11 (79)	22 (79)	14 (67)
None	20 (71)	15 (75)	18 (58)	13 (72)
Don’t know	12 (80)	9 (82)	13 (72)	6 (55)
Rural vs Urban				
Rural	60 (71)	47 (80)	67 (68)	42 (66)
Urban	48 (84)	30 (64)	40 (68)	17 (44)
Total	111 (77)	79 (72)	108 (67)	60 (58)

*Proportions are of those who reported having anal sex with that type of partner.

Table 6: Number and percentage of participants who were negative for HIV reporting having had unprotected anal sex during their most recent sexual encounter with a casual or main partner by partner's HIV serostatus, Iowa

Partner's serostatus	Insertive		Receptive	
	Anal sex	Unprotected anal sex	Anal sex	Unprotected anal sex
	No. (%)	No. (%)	No. (%)	No. (%)
Main Partner				
HIV-negative	42 (55)	28 (67)	39 (54)	31 (79)
HIV-positive	3 (38)	3 (100)	3 (43)	3 (100)
Unknown	11 (85)	10 (91)	4 (31)	4 (100)
Total	57 (57)	41 (75)	48 (51)	39 (81)
Casual Partner				
HIV-negative	16 (37)	8 (50)	15 (41)	9 (60)
HIV-positive	0 (0)	-	2 (67)	2 (100)
Unknown	8 (24)	5 (63)	15 (63)	12 (80)
Total	25 (31)	14 (56)	32 (49)	23 (72)

Table 7: Number and percentage of participants reporting noninjection-drug use during the preceding 12 months, by selected characteristics, Iowa

Characteristic	No.	(%)
Race/Ethnicity		
White, non-Hispanic	52	32
Black, non-Hispanic	0	0
Hispanic	1	25
Asian/Pacific Islander	1	33
American Indian/Alaska Native	1	100
Multiracial	2	25
Other	-	-
Age group (yrs)		
18-24	28	41
25-34	14	31
35-44	6	18
45-54	8	30
>= 55	1	13
Education		
<High School	0	0
High School diploma or equivalent	10	31
> High School	47	32
Sexual Identity		
Homosexual	1	100
Bisexual	47	32
Heterosexual	7	26
Other	2	40
Health Insurance		
Private	26	27
Public	10	33
None	12	33
Don’t know	9	50
Rural vs Urban		
Rural	24	36
Urban	32	29

Table 8: Number and percentage of persons who reported using noninjection drugs and being under the influence of noninjection drugs while having sex during the preceding 12 months by type of drug used, Iowa

Noninjection drug	Used Drug	Under influence during sex
	No. (%)	No. (%)
Stimulant (e.g., amphetamine or methamphetamine)	8 (4)	7 (4)
Crack	5 (3)	4 (2)
Cocaine	12 (7)	6 (3)
Downer (e.g., valium, ativan, or xanax)	13 (7)	5 (3)
Pain Killer (e.g., oxycontin or percocet)	16 (9)	12 (7)
Hallucinogen (e.g., LSD or mushrooms)	4 (2)	1 (1)
Ecstacy	7 (4)	3 (2)
Other club drug (e.g. GHB or ketamine)	5 (3)	4 (2)
Heroin	1 (1)	1 (1)
Marijuana	52 (28)	30 (16)
Poppers (amyl nitrate)	15 (8)	12 (7)
Other drug	1 (1)	1 (1)

Table 9: Number and percentage of participants reporting hepatitis vaccination and sexually transmitted disease (STD) testing by selected characteristic, Iowa

Characteristic	Hepatitis vaccination No. (%)	STD testing No. (%)
Race/Ethnicity		
White, non-Hispanic	100 (68)	48 (31)
Black, non-Hispanic	3 (75)	2 (50)
Hispanic	2 (67)	2 (50)
Asian/Pacific Islander	1 (33)	0 (0)
American Indian/Alaska Native	0 (0)	0 (0)
Multiracial	4 (50)	2 (25)
Other	-	-
Age group (yrs)		
18-24	41 (69)	22 (33)
25-34	29 (66)	13 (30)
35-44	21 (68)	8 (25)
45-54	15 (60)	9 (35)
>= 55	4 (50)	2 (25)
Education		
<High School	0 (0)	0 (0)
High School diploma or equivalent	15 (50)	12 (39)
> High School	95 (72)	42 (30)
Sexual Identity		
Homosexual	1 (100)	42 (29)
Bisexual	94 (68)	10 (40)
Heterosexual	14 (54)	0 (0)
Other	1 (50)	2 (40)
Health Insurance		
Private	68 (75)	31 (33)
Public	17 (59)	7 (24)
None	19 (59)	10 (29)
Don’t know	6 (40)	6 (33)
Rural vs Urban		
Rural	63 (63)	27 (26)
Urban	44 (70)	25 (37)

Table 10: Number and percentage of participants reporting having used HIV prevention services or programs during the preceding 12 months, by selected characteristics, Iowa

Characteristic	Received Free condoms	Individual-level intervention	Group-level intervention
	No. (%)	No. (%)	No. (%)
Race/Ethnicity			
White, non-Hispanic	72 (44)	25 (16)	17 (10)
Black, non-Hispanic	2 (50)	1 (25)	1 (25)
Hispanic	3 (75)	1 (25)	0 (0)
Asian/Pacific Islander	2 (67)	0 (0)	1 (33)
American Indian/Alaska Native	0 (0)	0 (0)	0 (0)
Multiracial	4 (50)	2 (25)	3 (38)
Other	-	-	-
Age group (yrs)			
18-24	38 (55)	8 (12)	7 (10)
25-34	22 (48)	8 (17)	5 (11)
35-44	9 (27)	5 (15)	2 (6)
45-54	13 (50)	8 (32)	6 (22)
>= 55	1 (13)	0 (0)	2 (25)
Education			
<High School	2 (40)	1 (20)	1 (20)
High School diploma or equivalent	12 (38)	7 (23)	3 (9)
> High School	69 (48)	21 (15)	18 (12)
Sexual Identity			
Homosexual	70 (47)	25 (17)	19 (13)
Bisexual	12 (44)	3 (12)	3 (11)
Heterosexual	0 (0)	0 (0)	0 (0)
Other	1 (20)	1 (20)	0 (0)
Health Insurance			
Private	51 (52)	13 (13)	12 (12)
Public	10 (33)	7 (23)	6 (20)
None	15 (42)	6 (18)	3 (8)
Don’t know	7 (39)	3 (18)	1 (6)
Rural vs Urban			
Rural	44 (40)	12 (11)	13 (12)
Urban	36 (54)	15 (23)	9 (14)

APPENDIX D
State Report – Minnesota

Table 1: Number and percentage of participants by selected characteristics: Men Who Have Sex with Men, Minnesota

Characteristic	No.	(%)
Race/Ethnicity		
White, non-Hispanic	155	93
Black, non-Hispanic	3	2
Hispanic	5	3
Asian/Pacific Islander	2	1
American Indian/Alaska Native	0	0
Multiracial	1	1
Other	1	1
Age group (yrs)		
18-24	61	37
25-34	38	23
35-44	35	21
45-54	19	11
>= 55	14	8
Education		
<High School	3	2
High School diploma or equivalent	22	13
> High School	142	85
Sexual Identity		
Homosexual	160	96
Bisexual	5	3
Heterosexual	0	0
Other	1	1
Health Insurance		
Private	109	66
Public	23	14
None	19	12
Don’t know	14	8
Rural vs Urban		
Rural	37	22
Urban	129	78

Table 2: Number and percentage of participants reporting having been tested for HIV by selected characteristics, Minnesota

Characteristic	Tested	
	Ever	Preceding 12 Months
Race/Ethnicity		
White, non-Hispanic	136 (88)	88 (58)
Black, non-Hispanic	3 (100)	1 (33)
Hispanic	4 (80)	3 (60)
Asian/Pacific Islander	2 (100)	1 (100)
American Indian/Alaska Native	-	-
Multiracial	1 (100)	1 (100)
Other	1 (100)	0 (0)
Age group (yrs)		
18-24	44 (72)	31 (53)
25-34	36 (95)	28 (78)
35-44	35 (100)	17 (49)
45-54	18 (95)	11 (58)
>= 55	14 (100)	7 (50)
Education		
<High School	2 (67)	0 (0)
High School diploma or equivalent	18 (82)	10 (53)
> High School	127 (89)	84 (60)
Sexual Identity		
Homosexual	144 (90)	91 (59)
Bisexual	3 (60)	3 (60)
Heterosexual	-	-
Other	0 (0)	0 (0)
Health Insurance		
Private	98 (90)	65 (61)
Public	21 (91)	11 (48)
None	19 (100)	11 (65)
Don’t know	7 (50)	6 (46)
Rural vs Urban		
Rural	31 (84)	22 (14)
Urban	115 (89)	72 (57)
Total	147 (88)	94 (58)

Table 3: Number and percentage of facility types reported as the most recent place of HIV testing , Minnesota

Facility Type	**No.**	**(%)**
Private doctor's office	58	39
Public health clinic or community health center	32	22
HIV counseling and testing program	11	7
HIV/AIDS street outreach	9	6
Hospital	10	7
Emergency room	2	1
Sexually Transmitted disease clinic	12	8
Blood bank/ Plasma center	5	3
Military	0	0
At home	4	3
Other	4	3

Table 4: Number and percentage of reasons for participants not being tested for HIV in the past 12 months, Minnesota

Reason Reported	A reason No. (%)	Main Reason No. (%)
Haven't done anything to get HIV	8 (5)	1 (8)
Afraid of finding out infected with HIV	7 (4)	0 (0)
Don't know where to go	6 (4)	2 (15)
Couldn't get transportation	1 (1)	0 (0)
Don't like needles	4 (2)	1 (8)
Worried name would be reported to the government	3 (2)	1 (8)
Worried someone would find out about the test result	5 (3)	2 (15)
Afraid of losing job, insurance, housing, family or friends if positive	3 (2)	1 (8)
Didn't have time	7 (4)	1 (8)
Didn't have money or insurance	5 (3)	1 (8)
Other	3 (2)	3 (23)

Table 5: Number and percentage of participants reporting having had anal sex with a main or casual male partner during the preceding 12 months by selected characteristics, Minnesota

Characteristic	Main Partner		Casual Partner	
	Anal sex	Unprotected anal sex*	Anal sex	Unprotected anal sex*
	No. (%)	No. (%)	No. (%)	No. (%)
Race/Ethnicity				
White, non-Hispanic	104 (77)	84 (81)	78 (62)	52 (68)
Black, non-Hispanic	1 (50)	0 (0)	1 (33)	0 (0)
Hispanic	3 (75)	2 (67)	4 (80)	4 (100)
Asian/Pacific Islander	2 (100)	2 (100)	1 (50)	0 (0)
American Indian/Alaska Native	-	-	-	-
Multiracial	1 (100)	0 (0)	0 (0)	0 (0)
Other	0 (0)	0 (0)	0 (0)	0 (0)
Age group (yrs)				
18-24	48 (87)	40 (83)	26 (54)	15 (63)
25-34	25 (71)	19 (76)	23 (68)	18 (82)
35-44	25 (81)	19 (76)	21 (75)	16 (76)
45-54	7 (50)	6 (86)	8 (53)	4 (50)
>= 55	6 (60)	4 (67)	6 (46)	4 (50)
Education				
<High School	1 (50)	0 (0)	0 (0)	0 (0)
High School diploma or equivalent	15 (71)	12 (80)	8 (47)	5 (100)
> High School	95 (78)	76 (80)	76 (64)	51 (67)
Sexual Identity				
Homosexual	107 (76)	85 (79)	80 (61)	52 (68)
Bisexual	3 (75)	2 (67)	3 (60)	3 (100)
Heterosexual	-	-	-	-
Other	0 (0)	1 (100)	0 (0)	0 (0)
Health Insurance				
Private	76 (79)	60 (79)	57 (63)	36 (63)
Public	12 (67)	8 (67)	10 (50)	6 (60)
None	16 (89)	13 (81)	9 (60)	7 (100)
Don’t know	6 (50)	6 (100)	7 (63)	6 (100)
Rural vs Urban				
Rural	26 (72)	23 (88)	12 (46)	9 (90)
Urban	85 (78)	65 (76)	71 (64)	46 (65.71)
Total	111 (77)	88 (79)	84 (61)	56 (69)

*Proportions are of those who reported having anal sex with that type of partner.

Table 6: Number and percentage of participants who were negative for HIV reporting having had unprotected anal sex during their most recent sexual encounter with a casual or main partner by partner's HIV serostatus, Minnesota

Partner's serostatus	Insertive		Receptive	
	Anal sex	Unprotected anal sex	Anal sex	Unprotected anal sex
	No. (%)	No. (%)	No. (%)	No. (%)
Main Partner				
HIV-negative	38 (45)	32 (84)	48 (63)	35 (73)
HIV-positive	4 (44)	4 (100)	7 (88)	6 (86)
Unknown	4 (50)	4 (100)	4 (57)	4 (100)
Total	47 (46)	41 (67)	61 (66)	47 (77)
Casual Partner				
HIV-negative	14 (48)	12 (80)	9 (38)	5 (56)
HIV-positive	4 (40)	4 (100)	8 (80)	7 (88)
Unknown	9 (28)	4 (44)	8 (36)	6 (75)
Total	27 (43)	20 (71)	25 (29)	18 (28)

Table 7: Number and percentage of participants reporting noninjection-drug use during the preceding 12 months, by selected characteristics, Minnesota

Characteristic	No.	(%)
Race/Ethnicity		
White, non-Hispanic	48	31
Black, non-Hispanic	0	0
Hispanic	1	20
Asian/Pacific Islander	1	50
American Indian/Alaska Native	-	-
Multiracial	0	0
Other	0	0
Age group (yrs)		
18-24	22	37
25-34	14	37
35-44	7	20
45-54	5	26
>= 55	2	14
Education		
<High School	1	33
High School diploma or equivalent	7	33
> High School	42	30
Sexual Identity		
Homosexual	45	28
Bisexual	3	60
Heterosexual	-	-
Other	1	100
Health Insurance		
Private	31	28
Public	6	27
None	8	42
Don’t know	4	29
Rural vs Urban		
Rural	10	27
Urban	40	31

Table 8: Number and percentage of persons who reported using non-injection drugs and being under the influence of non-injection drugs while having sex during the preceding 12 months by type of drug used, Minnesota

Noninjection drug	Used Drug	Under influence during sex
	No. (%)	No. (%)
Stimulant (e.g., amphetamine or methamphetamine)	10 (6)	9 (5)
Crack	5 (3)	4 (2)
Cocaine	10 (6)	5 (3)
Downer (e.g., valium, ativan, or xanax)	10 (6)	3 (2)
Pain Killer (e.g., oxycontin or percocet)	12 (7)	6 (4)
Hallucinogen (e.g., LSD or mushrooms)	4 (2)	2 (1)
Ecstacy	9 (5)	4 (2)
Other club drug (e.g. GHB or ketamine)	8 (5)	3 (2)
Heroin	3 (2)	1 (1)
Marijuana	36 (22)	21 (13)
Poppers (amyl nitrate)	23 (14)	21 (13)
Other drug	6 (4)	5 (3)

Table 9: Number and percentage of participants reporting hepatitis vaccination and sexually transmitted disease (STD) testing by selected characteristic, Minnesota

Characteristic	Hepatitis vaccination No. (%)	STD testing No. (%)
Race/Ethnicity		
White, non-Hispanic	102 (76)	78 (52)
Black, non-Hispanic	1 (50)	1 (50)
Hispanic	4 (80)	4 (80)
Asian/Pacific Islander	2 (100)	2 (100)
American Indian/Alaska Native	-	-
Multiracial	1 (100)	1 (100)
Other	0 (0)	0 (0)
Age group (yrs)		
18-24	34 (69)	27 (46)
25-34	27 (75)	24 (67)
35-44	28 (90)	21 (60)
45-54	12 (75)	10 (53)
>= 55	9 (69)	4 (31)
Education		
<High School	2 (67)	1 (33)
High School diploma or equivalent	7 (47)	9 (47)
> High School	101 (80)	76 (54)
Sexual Identity		
Homosexual	107 (78)	84 (54)
Bisexual	3 (60)	2 (40)
Heterosexual	-	-
Other	0 (0)	0 (0)
Health Insurance		
Private	78 (76)	56 (52)
Public	13 (72)	15 (68)
None	14 (82)	9 (50)
Don't know	5 (63)	5 (38)
Rural vs Urban		
Rural	18 (60)	72 (57)
Urban	91 (80)	14 (40)

Table 10: Number and percentage of participants reporting having used HIV prevention services or programs during the preceding 12 months, by selected characteristics, Minnesota

Characteristic	Received Free condoms	Individual-level intervention	Group-level intervention
	No. (%)	No. (%)	No. (%)
Race/Ethnicity			
White, non-Hispanic	92 (60)	40 (26)	16 (10)
Black, non-Hispanic	1 (33)	2 (67)	1 (33)
Hispanic	3 (60)	2 (40)	1 (20)
Asian/Pacific Islander	2 (100)	1 (50)	0 (0)
American Indian/Alaska Native	-	-	-
Multiracial	1 (100)	1 (100)	0 (0)
Other	1 (100)	0 (0)	0 (0)
Age group (yrs)			
18-24	38 (62)	11 (18)	3 (5)
25-34	22 (58)	13 (34)	5 (13)
35-44	24 (71)	14 (40)	8 (23)
45-54	8 (42)	6 (32)	2 (11)
>= 55	9 (57)	2 (14)	0 (0)
Education			
<High School	3 (100)	2 (67)	1 (33)
High School diploma or equivalent	8 (36)	3 (14)	2 (9)
> High School	89 (63)	41 (29)	15 (11)
Sexual Identity			
Homosexual	95 (60)	46 (29)	18 (11)
Bisexual	3 (60)	0 (0)	0 (0)
Heterosexual	-	-	-
Other	1 (100)	0 (0)	0 (0)
Health Insurance			
Private	61 (56)	27 (25)	8 (7)
Public	18 (78)	11 (48)	7 (30)
None	11 (61)	5 (26)	1 (5)
Don’t know	9 (64)	3 (21)	1 (7)
Rural vs Urban			
Rural	21 (54)	8 (22)	3 (8)
Urban	80 (63)	38 (29)	15 (12)

APPENDIX E
State Report – South Carolina

Table 1: Number and percentage of participants by selected characteristics: Men Who Have Sex with Men, South Carolina

Characteristic	No.	(%)
Race/Ethnicity		
White, non-Hispanic	76	84
Black, non-Hispanic	4	4
Hispanic	2	2
Asian/Pacific Islander	3	3
American Indian/Alaska Native	1	1
Multiracial	3	3
Other	1	1
Age group (yrs)		
18-24	31	34
25-34	16	18
35-44	20	22
45-54	20	22
>= 55	4	4
Education		
<High School	5	5
High School diploma or equivalent	21	23
> High School	65	71
Sexual Identity		
Homosexual	84	92
Bisexual	6	7
Heterosexual	0	0
Other	1	1
Health Insurance		
Private	45	49
Public	12	13
None	31	34
Don’t know	3	3
Rural vs Urban		
Rural	56	64
Urban	31	36

Table 2: Number and percentage of participants reporting having been tested for HIV by selected characteristics, South Carolina

Characteristic	Tested	
	Ever	Preceding 12 Months
Race/Ethnicity		
White, non-Hispanic	66 (89)	40 (54)
Black, non-Hispanic	4 (100)	4 (100)
Hispanic	2 (100)	0 (0)
Asian/Pacific Islander	1 (33)	1 (100)
American Indian/Alaska Native	1 (100)	1 (100)
Multiracial	3 (100)	3 (100)
Other	1 (100)	1 (100)
Age group (yrs)		
18-24	22 (71)	19 (55)
25-34	16 (100)	12 (75)
35-44	20 (100)	11 (55)
45-54	18 (95)	9 (47)
>= 55	3 (100)	1 (33)
Education		
<High School	4 (80)	3 (60)
High School diploma or equivalent	15 (75)	10 (50)
> High School	60 (94)	37 (58)
Sexual Identity		
Homosexual	73 (89)	44 (54)
Bisexual	5 (83)	5 (83)
Heterosexual	-	-
Other	1 (100)	1 (100)
Health Insurance		
Private	37 (86)	24 (56)
Public	12 (100)	6 (50)
None	27 (87)	17 (55)
Don’t know	3 (100)	3 (100)
Rural vs Urban		
Rural	49 (91)	30 (56)
Urban	27 (87)	18 (58)
Total	79 (89)	50 (56)

Table 3: Number and percentage of facility types reported as the most recent place of HIV testing , South Carolina

Facility Type	**No.**	**(%)**
Private doctor's office	34	43
Public health clinic or community health center	15	19
HIV counseling and testing program	13	16
HIV/AIDS street outreach	2	3
Hospital	5	6
Emergency room	0	0
Sexually Transmitted disease clinic	2	3
Blood bank/ Plasma center	2	3
Military	4	5
At home	0	0
Other	2	3

Table 4: Number and percentage of reasons for participants not being tested for HIV in the past 12 months, South Carolina

Reason Reported	A reason No. (%)	Main Reason No. (%)
Haven't done anything to get HIV	4 (4)	2 (33)
Afraid of finding out infected with HIV	2 (2)	0 (0)
Don't know where to go	2 (2)	0 (0)
Couldn't get transportation	1 (1)	0 (0)
Don't like needles	3 (3)	0 (0)
Worried name would be reported to the government	2 (2)	0 (0)
Worried someone would find out about the test result	2 (2)	1 (17)
Afraid of losing job, insurance, housing, family or friends if positive	2 (2)	0 (0)
Didn't have time	1 (1)	0 (0)
Didn't have money or insurance	2 (2)	1 (17)
Other	3 (3)	2 (33)

Table 5: Number and percentage of participants reporting having had anal sex with a main or casual male partner during the preceding 12 months by selected characteristics, South Carolina

Characteristic	Main Partner		Casual Partner	
	Anal sex	Unprotected anal sex*	Anal sex	Unprotected anal sex*
	No. (%)	No. (%)	No. (%)	No. (%)
Race/Ethnicity				
White, non-Hispanic	57 (83)	46 (82)	31 (51)	18 (60)
Black, non-Hispanic	2 (50)	1 (50)	2 (67)	0 (0)
Hispanic	2 (100)	2 (100)	1 (50)	1 (100)
Asian/Pacific Islander	1 (100)	1 (100)	1 (33)	0 (0)
American Indian/Alaska Native	1 (100)	1 (100)	0 (0)	0 (0)
Multiracial	3 (100)	3 (100)	1 (33)	1 (100)
Other	1 (100)	0 (0)	1 (100)	1 (100)
Age group (yrs)				
18-24	26 (100)	19 (76)	14 (48)	9 (64)
25-34	12 (75)	10 (83)	4 (29)	2 (50)
35-44	15 (83)	15 (100)	10 (67)	7 (78)
45-54	13 (81)	9 (69)	8 (62)	3 (38)
>= 55	1 (50)	1 (100)	2 (50)	1 (50)
Education				
<High School	3 (75)	3 (100)	3 (75)	0 (0)
High School diploma or equivalent	16 (84)	12 (80)	6 (40)	6 (100)
> High School	48 (87)	39 (82)	29 (52)	16 (57)
Sexual Identity				
Homosexual	63 (86)	52 (84)	36 (51)	21 (60)
Bisexual	3 (75)	1 (33)	1 (25)	0 (0)
Heterosexual	-	-	-	-
Other	1 (100)	1 (100)	1 (100)	1 (100)
Health Insurance				
Private	32 (91)	**27 (87)**	18 (47)	9 (53)
Public	8 (67)	6 (75)	7 (78)	4 (57)
None	24 (86)	18 (75)	12 (48)	8 (67)
Don’t know	3 (100)	3 (100)	1 (33)	1 (100)
Rural vs Urban				
Rural	43 (86)	37 (58)	25 (52)	16 (67)
Urban	21 (88)	15 (71)	12 (52)	6 (50)
Total	67 (86)	54 (82)	38 (51)	22 (59)

*Proportions are of those who reported having anal sex with that type of partner.

Table 6: Number and percentage of participants who were negative for HIV reporting having had unprotected anal sex during their most recent sexual encounter with a casual or main partner by partner's HIV serostatus, South Carolina

Partner's serostatus	Insertive		Receptive	
	Anal sex	Unprotected anal sex	Anal sex	Unprotected anal sex
	No. (%)	No. (%)	No. (%)	No. (%)
Main Partner				
HIV-negative	26 (52)	22 (85)	29 (48)	24 (72)
HIV-positive	3 (75)	2 (67)	1 (25)	1 (100)
Unknown	1 (100)	1 (100)	0 (0)	0 (0)
Total	33 (54)	27 (82)	32 (54)	27 (84)
Casual Partner				
HIV-negative	4 (25)	3 (75)	6 (43)	3 (50)
HIV-positive	1 (33)	0 (0)	2 (100)	1 (50)
Unknown	3 (30)	1 (33)	5 (71)	2 (40)
Total	8 (20)	4 (50)	13 (57)	6 (46)

Table 7: Number and percentage of participants reporting noninjection-drug use during the preceding 12 months, by selected characteristics, South Carolina

Characteristic	No.	(%)
Race/Ethnicity		
White, non-Hispanic	23	32
Black, non-Hispanic	0	0
Hispanic	2	100
Asian/Pacific Islander	1	33
American Indian/Alaska Native	0	0
Multiracial	1	33
Other	0	0
Age group (yrs)		
18-24	12	39
25-34	4	25
35-44	8	40
45-54	3	17
>= 55	0	0
Education		
<High School	1	20
High School diploma or equivalent	8	40
> High School	18	29
Sexual Identity		
Homosexual	26	32
Bisexual	0	0
Heterosexual	-	-
Other	1	100
Health Insurance		
Private	8	19
Public	6	50
None	12	40
Don’t know	1	33
Rural vs Urban		
Rural	17	32
Urban	8	26

Table 8: Number and percentage of persons who reported using noninjection drugs and being under the influence of noninjection drugs while having sex during the preceding 12 months by type of drug used, South Carolina

Noninjection drug	Used Drug	Under influence during sex
	No. (%)	No. (%)
Stimulant (e.g., amphetamine or methamphetamine)	4 (4)	2 (2)
Crack	1 (1)	1 (1)
Cocaine	8 (9)	5 (5)
Downer (e.g., valium, ativan, or xanax)	9 (10)	4 (4)
Pain Killer (e.g., oxycontin or percocet)	8 (9)	3 (3)
Hallucinogen (e.g., LSD or mushrooms)	3 (3)	0 (0)
Ecstacy	6 (7)	4 (4)
Other club drug (e.g. GHB or ketamine)	3 (3)	1 (1)
Heroin	0 (0)	0 (0)
Marijuana	24 (26)	13 (14)
Poppers (amyl nitrate)	3 (3)	2 (2)
Other drug	2 (2)	2 (2)

Table 9: Number and percentage of participants reporting hepatitis vaccination and sexually transmitted disease (STD) testing by selected characteristic, South Carolina

Characteristic	Hepatitis vaccination No. (%)	STD testing No. (%)
Race/Ethnicity		
White, non-Hispanic	37 (54)	
Black, non-Hispanic	1 (25)	
Hispanic	2 (100)	
Asian/Pacific Islander	0 (0)	
American Indian/Alaska Native	0 (0)	
Multiracial	1 (33)	
Other	1 (100)	
Age group (yrs)		
18-24	19 (67)	
25-34	6 (43)	
35-44	9 (47)	
45-54	7 (39)	
>= 55	2 (67)	
Education		
<High School	1 (33)	
High School diploma or equivalent	8 (47)	
> High School	34 (55)	
Sexual Identity		
Homosexual	39 (52)	
Bisexual	4 (67)	
Heterosexual	-	
Other	0 (0)	
Health Insurance		
Private	23 (55)	
Public	5 (50)	
None	15 (56)	
Don’t know	0 (0)	
Rural vs Urban		
Rural	27 (54)	
Urban	14 (50)	

Table 10: Number and percentage of participants reporting having used HIV prevention services or programs during the preceding 12 months, by selected characteristics, South Carolina

Characteristic	Received Free condoms	Individual-level intervention	Group-level intervention
	No. (%)	No. (%)	No. (%)
Race/Ethnicity			
White, non-Hispanic	28 (37)	8 (11)	9 (12)
Black, non-Hispanic	2 (50)	3 (75)	2 (50)
Hispanic	0 (0)	0 (0)	0 (0)
Asian/Pacific Islander	0 (0)	0 (0)	0 (0)
American Indian/Alaska Native	1 (100)	0 (0)	0 (0)
Multiracial	1 (33)	0 (0)	1 (33)
Other	0 (0)	0 (0)	0 (0)
Age group (yrs)			
18-24	14 (47)	3 (10)	7 (23)
25-34	4 (25)	5 (31)	3 (19)
35-44	6 (30)	0 (0)	1 (5)
45-54	7 (37)	3 (15)	1 (5)
>= 55	1 (25)	0 (0)	0 (0)
Education			
<High School	2 (40)	1 (20)	1 (20)
High School diploma or equivalent	7 (33)	3 (14)	3 (14)
> High School	23 (37)	7 (11)	8 (12)
Sexual Identity			
Homosexual	30 (36)	10 (12)	10 (12)
Bisexual	1 (20)	1 (17)	1 (17)
Heterosexual	-	-	-
Other	1 (100)	0 (0)	1 (100)
Health Insurance			
Private	16 (37)	3 (7)	5 (11)
Public	5 (42)	3 (24)	2 (17)
None	9 (29)	4 (13)	4 (13)
Don’t know	2 (67)	1 (33)	1 (33)
Rural vs Urban			
Rural	19 (33)	4 (7)	4 (7)
Urban	11 (38)	7 (23)	7 (23)

APPENDIX F
IRB Approval

TO: Robert Sineath
Principal Investigator

CC: Sullivan Patrick Epidemiology

DATE: October 4, 2010

RE: **Notification of Expedited Approval**
IRB00046733
Developing the NHBS survey into an internet-based survey to be used nation-wide at the local and state health department level

This is your notification that your above referenced study was reviewed and APPROVED under the Expedited review process per 45 CFR 46.110(7) and 21 CFR 56.110. The approval is valid from **10/4/2010 until 10/3/2011.** Thereafter, continued approval is contingent upon the submission of a continuing review request that must be reviewed and approved by the IRB prior to the expiration date of this study.

A request to waive documentation of written/signed informed consent has been reviewed and approved under 45 CFR 46.117(c): 1) the research is not FDA-regulated AND; 2) the only record linking the subject and the research would be the signed consent document AND; 3) the principal risk of the research would be potential harm resulting from a breach of confidentiality.

Version of Approved Documents:
sineat_smallstate_protocol_9_14
consent_smallstate_9_14_v2

Any reportable events (serious adverse events, breaches of confidentiality, protocol deviation or protocol violations) or issues resulting from this study should be reported immediately to the IRB and to the sponsoring agency (if any). Any amendments (changes to any portion of this research study including but not limited to protocol or informed consent changes) must have IRB approval before being implemented.

Please include the IRB ID number, the name of the Principal Investigator and the study title in any correspondence and inquiries concerning this research study.

Sincerely,

Carol Corkran, MPH, CIP
Senior Research Protocol Analyst
This letter has been digitally signed

APPENDIX G

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OVER 6,000 PEOPLE
ARE LIVING
WITH HIV IN
MINNESOTA
TAKE THE
MINNESOTA
MEN'S HEALTH
SURVEY


ALMOST 2,000
PEOPLE ARE
LIVING
WITH HIV IN
IOWA
TAKE THE
IOWA
MEN'S HEALTH
SURVEY