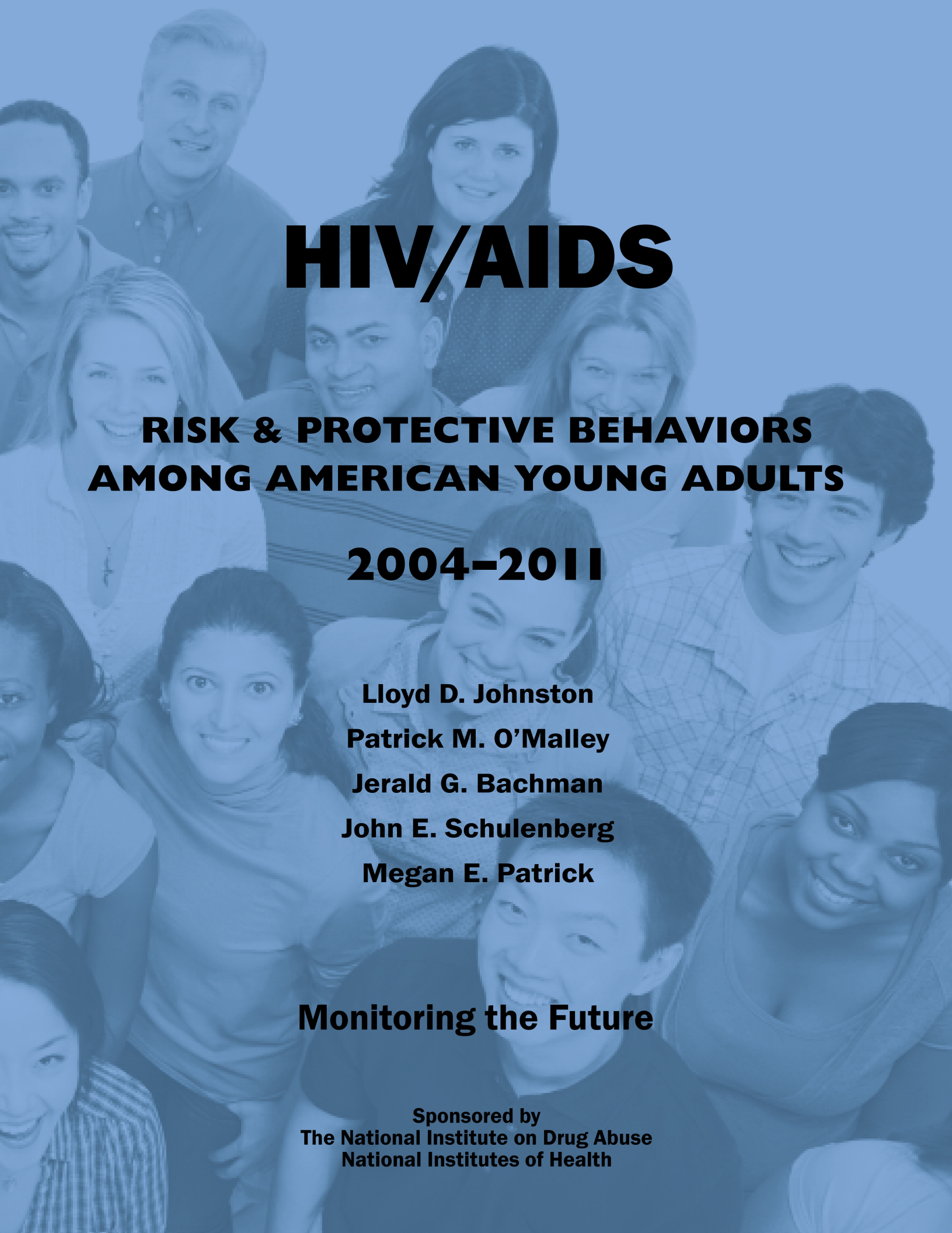

HIV/AIDS

RISK & PROTECTIVE BEHAVIORS AMONG AMERICAN YOUNG ADULTS

2004–2011

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Monitoring the Future

Sponsored by
The National Institute on Drug Abuse
National Institutes of Health

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Chapter 1

INTRODUCTION

Monitoring the Future (MTF) is a long-term study of American adolescents, college students, and adults through age 50, and soon to extend to age 55. The study is supported under a series of investigator-initiated, competing research grants from the National Institute on Drug Abuse and has been conducted annually by the University of Michigan's Institute for Social Research since 1975.

The present monograph focuses on a broad range of behaviors, including certain forms of substance abuse related to the spread of the human immunodeficiency virus (HIV) responsible for the acquired immunodeficiency syndrome (AIDS). The population under study includes young adult high school graduates ages 21–30 in the general population, surveyed since 2004; 35-year-olds surveyed since 2008; and 40-year-olds surveyed since 2010.

HIV infection is a serious public health concern. Worldwide, more people live with HIV than ever before (Steinbrook, 2012). In the United States, about 1.2 million people are living with HIV, with 1 in 5 unaware of the infection (CDC, 2011). The 1990s saw decreases in HIV infection but from 2002 to 2009 the trend in number of new HIV/AIDS cases and deaths has remained largely unchanged (CDC, 2011). Each year, about 50,000 individuals become newly infected in the United States (Hall et al., 2008; CDC, 2011). MTF surveys assess both sexual risk behaviors and injection drug use, which are two main sources of HIV infection. In addition to the particular risk of HIV, young adults are also at high risk of contracting other sexually transmitted diseases and infections (STDs/STIs). Individuals ages 15 to 24 represent about half of the 19 million STDs occurring annually in the United States (Weinstock et al., 2004). In this monograph we track some of the key behaviors related to the spread of HIV/AIDS in the United States.

The present volume is the fourth monograph in the MTF series of annual reports, all available online from the MTF website. The first monograph, *Overview of Key Findings,* is published near the beginning of each year and provides early findings on the levels and trends in use of various substances by the nation's 8th-, 10th-, and 12th-grade students surveyed in the previous year (Johnston et al., 2012a). *Volume I,* published at the beginning of June, provides more detailed and complete findings on the same population (Johnston et al., 2012b). *Volume II*, available at the beginning of August, provides similar prevalence and trend information on the substance-using behaviors of adult high school graduates through age 50 (and beginning in 2013, through age 55), based on a series of follow-up mailed surveys of representative samples of students from each high school graduating class (Johnston et al., 2012c). One important subgroup of the adults surveyed annually in these follow-up surveys is college students, and *Volume II* has provided findings specific to that population since 1980. Prior to 2009, Volume II also contained findings based on measures of HIV/AIDS risk and protective behaviors introduced into the MTF follow-up studies in 2004.

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Chapter 2

BACKGROUND

Since the early 1980s, the spread of HIV/AIDS has been a serious public health concern. Some of the behaviors that put people at heightened risk of contracting and spreading HIV are connected to drug abuse—in particular, drug use by injection when it involves needle sharing. Other behaviors related to heightened risk involve sexual practices, in particular having multiple sex partners, which itself is a behavior correlated with drug use. Further, both drug use and having multiple sex partners tend to be more prevalent among young adults than other age groups (Lefkowitz & Gillen, 2006; Anderson & Dahlberg, 1992; Gavin et al., 2009). In addition, men having sex with men is a long-recognized major risk behavior, particularly in the absence of condom use.

In a recently published paper (Patrick et al., 2012), we documented that the number of sexual partners is positively correlated with binge drinking, marijuana use, and other illicit drug use, and that these relationships vary across time. In addition, more frequent use of marijuana and other illicit drugs was associated with less frequent condom use. There was a moderation effect, indicating that the link between binge drinking and more sexual partners was stronger for younger individuals (i.e., aged 21–24) than older individuals (i.e., aged 25–30).

An important protective behavior is getting tested for HIV/AIDS, particularly given the advent of effective retroviral treatments for the disease (Fauci & Folkers, 2012; Steinbrook, 2012). Early detection can alert the infected individual to the potential of infecting others, particularly others with whom he or she has sexual relations or shares needles. Early and sustained treatment can not only protect the treated individual but also reduce the odds of transmission to others. In order to stem the tide of HIV infections, infected individuals need to be identified and then effective care must be initiated (Gardner et al., 2011).

A second main protective behavior is condom use. According to the CDC, “latex condoms, when used consistently and correctly, are highly effective in preventing the sexual transmission of HIV” and other sexually transmitted diseases (CDC, 2011). However, consistent condom use is not widespread. According to the CDC (2010), only 23% of women aged 15–44 who have never been married (and are not cohabiting with a partner) choose condoms as their method of contraception. Rates of dual-method contraceptive use (i.e., using the male condom plus an oral or other contraceptive method) to prevent both STDs and unintended pregnancy is very low in the United States, about 7% for women who report using the pill and even lower for women who report using other female contraceptive methods (National Survey for Family Growth; Eisenberg et al., 2012). Condom use is the only way to prevent HIV and other STDs among sexually active individuals, and is a clear focus of HIV prevention efforts.

Blood donation is not a risk behavior for contracting HIV, but carries a small risk for transmission. This risk has been dramatically reduced in recent years by the routine screening of donated blood for HIV. Still, the Red Cross estimates that, if someone first became infected with HIV within what they call the "window period," which they define as 4 to 7 days before donating blood, the infection might not be detected in the screening tests (http://www.redcrossblood.org/learn-about-blood/what-happens-donated-blood/blood-testing). In addition to examining individual risk and protective factors associated with contracting HIV, we also examine blood donation prevalence, including among adults otherwise at risk for HIV transmission.

Other Relevant Studies of the General Population

A considerable literature has evolved based on studies of particular high-risk populations, such as injection drug users and men who have sex with men, but there are fewer studies of these behaviors as they occur in the general population. To our knowledge, there are currently six data collection efforts in addition to the present one that provide some information on HIV/AIDS risk behaviors based on nationally representative surveys of the general population. These studies are described and compared to Monitoring the Future in the Appendix to this volume. Each of these surveys provides some key HIV/AIDS risk behavior data; however, as discussed in the Appendix, none fully duplicates the type of HIV/AIDS-related information produced by the Monitoring the Future study.

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Chapter 3

RESEARCH DESIGN

MTF is uniquely suited to address key gaps in the literature concerning HIV/AIDS-related risk and protective behaviors. Most of the features that make MTF an important epidemiologic and etiologic study of drug use also apply to tracking and studying HIV/AIDS-related behaviors. MTF is population-based, prospective, cohort-sequential, and has especially rich measures of drug use with which to study how drug use relates directly (through injection drug use) and indirectly (through engaging in risky sexual and other behaviors) to HIV transmission.

The MTF research design is described in detail in both *Volume I* and *Volume II*, so we limit the description here to a brief overview.

Samples

The MTF design has included a representative subsample of each 12th-grade class sample since 1976, with 2,400 participants from each class selected in a stratified random procedure for follow-up. The 2,400 are randomly split into two half samples of 1,200, one surveyed on even numbered years and the other surveyed on odd numbered years up to six times, through modal ages 29 or 30. After that, they are followed at five-year intervals, starting at age 35, currently up to age 50. With this design, it is possible to present data for each class every year while surveying each respondent only every other year through age 30; this schedule was judged to be less demanding and, therefore, more conducive to retention in the panels. In order to ensure sufficient numbers of drug users in these panels, certain groups are selected for follow-up with a higher probability (by a factor of 3.0) than the remaining 12th graders. This includes those who report 20 or more occasions of marijuana use in the prior 30 days (i.e., "daily or near-daily users") in 12th grade or *any* use of other illicit drugs in the prior 30 days. Differential weighting is then used in all subsequent analyses to adjust for these differential sampling probabilities. Because those in the drug-using stratum receive a weight of 0.33 in the calculation of all statistics to correct for their overrepresentation in the selection stage, the actual numbers of follow-up respondents are larger than the *weighted N*s given in the tables.

The respondents included in these analyses were drawn from participants in the MTF follow-up surveys of 21- to 30-year-olds in 2004–2011 (representing graduates from the classes of 1992–2008); 35-year-olds in 2008–2011 (representing graduates from the classes of 1991–1994); and 40-year-olds in 2010–2011 (representing graduates from the classes of 1988–1989).

The present monograph reports findings from respondents of modal ages 21 to 30, 35, and 40. For those ages 21 to 30, there are eight years of data (collected in 2004 through 2011; weighted N = 17,191); for those age 35 there are four years of data (collected in 2008 through 2011; weighted N = 3,249), and for those age 40 there are two years of data (collected in 2010 and 2011; weighted N = 1,813). Because of the limited sample sizes, particularly at the older ages, certain subgroup estimates are not reliable and therefore are not reported.

Measures

Each 12th-grade sample in recent years has been administered six different questionnaire forms in their senior year—a procedure adopted in order to cover more material than would have been possible in one class period using a single form. In the follow-up surveys, each individual receives the same form as the one completed in 12th grade, though some content is replaced with more age-appropriate topics such as family formation, experiences in higher education, and work history. In 2004, new questions covering risk *and* protective behaviors for HIV/AIDS were included in two of the questionnaire forms being mailed to people of modal ages 21–30. Beginning in 2007, this set of questions was added to a third questionnaire form in order to increase sample size.

Risk behavior variables include lifetime and 12-month frequency of injecting drugs without a doctor's order; lifetime and 12-month prevalence of using a needle that respondents "knew (or suspected) had been used by someone else" before they used it; number of sex partners during the 12 months prior to the survey; and whether those partners had been exclusively opposite sex, same sex, or both male and female. *Protective behaviors* include lifetime and 12-month prevalence of being tested for HIV, obtaining the results of the most recent HIV test, and frequency of condom use in the prior 12 months. We also ask about lifetime and 12-month prevalence of donating blood or blood plasma, not because it is a behavior that puts the respondent at risk, but because it is a behavior that—depending on the risky behaviors of the respondent—might put others at risk. The exact questions measuring these different variables are included in the tables in this monograph.

Being tested for HIV/AIDS and securing the results have been shown to be protective behaviors not only because they provide earlier protection for people testing positive who then can get treatment that should reduce the progression of the disease and the likelihood of dying from it, (Cohen et al., 2011) but also because on average people who have tested positive can expose fewer partners to the disease by abstaining from sexual contact with them and/or by using condoms.

One reason for limiting the new HIV/AIDS-related questions to two forms initially was to determine whether the inclusion of these sensitive items would adversely affect response rates. Fortunately, no decrement was observed, so the same set of questions was added to an additional questionnaire form in the 2007 survey of young adults, raising the case count to half again what it had been in 2004–2006.[1]

In 2008 the same set of questions was added to the single questionnaire form that went to a random half-sample of the 35-year-olds, and response rates were compared that year between the half-sample receiving the revised form and the half-sample that received the original form. The response rates were comparable for the two half samples, so the new set of questions was included in surveys of all 35-year-olds in 2009 and later. Because of concerns about whether the impact on response rates might rise with increasing age, we tried the age-35 stratum first, and finding no clear adverse effect, added the question set to the age-40 stratum in 2010.

[1]When we added this new form to the set containing questions on risk and protective behaviors for the transmission of HIV, we compared its results with those from the other two forms to make sure that there were not systematic differences across forms in the estimates derived. The results proved highly comparable across forms, which is reassuring for trend estimation based on the increasing number of forms used.

Field Procedures

The initial data collection from panel members occurs at 12th grade; they complete a self-administered questionnaire in a group setting, usually their normal classroom but sometimes in larger groups. They are asked to complete the questionnaires during a usual class period (about 45 minutes) and to complete a tear-off card providing contact information, which permits subsequent communication with the subsample selected for panel study follow-up. After the card is separated from the questionnaire, the identifying information on it can only be matched to the questionnaire using a computer file at the University of Michigan, because the numbers printed on the back of the questionnaire and the card are randomly matched numbers. This, plus the facts that the questionnaires are machine-readable and that they are administered (and the cards are collected) separately by a field representative from the University of Michigan, helps to assure most respondents that their confidentiality has been protected.

The respondents subsequently selected into the panels are followed by mail—a highly cost-effective method of data collection that helps make our large samples possible. Annually, each respondent receives an MTF newsletter with an address correction card enclosed; each respondent up to age 29 also receives an invitation letter sent prior to the questionnaire. A subsequent letter is printed on the front of the questionnaire. The questionnaire is sent with a check made out to the subject, currently in the amount of $20 in the case of the older panels (age 35 or over); the payment was raised to $25 per occasion for half of the class of 2006 and for all high school graduating classes thereafter to help offset the effects of inflation. Extensive efforts are made to secure location information on previous participants whom we are unable to locate by mail. Reminder postcards are sent about two weeks after the questionnaires, and telephone calls are made to attempt to contact those who have not responded after a reasonable interval and to request their participation. No answers to the questionnaire are collected by telephone; responses are obtained only by mail.

Panel Retention

We discuss next the nature of the panel attrition problem generally, the response rates for MTF panel surveys in recent years, and evidence relevant to assessing the impact of attrition on the study's research results.

Response Rates. Virtually all longitudinal studies—including MTF—experience attrition, which is often differential with respect to health risks including substance use (McGuigan et al., 1997). In addition, survey response rates in general have been declining over the past few decades, (Groves et al., 2002; Wechsler et al., 2002), highlighting an important challenge in the conduct of all population-based research.

A vital feature of the MTF panel studies is their very low cost per respondent. There are many advantages to collecting panel data through low-cost mail surveys. Indeed, given the number of MTF questionnaires sent each year (roughly 18,000) across the entire coterminous U.S., using low-cost mail surveys is our best (and really only) cost-effective option at the present time. One disadvantage of data collection by mail is that attrition rates tend to be higher than those that might be obtained with much more expensive methods, such as intensive personal tracking and interviewing. There exist a few large epidemiological/etiological surveys that have better retention rates, but their procedures are extremely expensive and not realistic for an ongoing

effort like MTF. Our retention rates compare favorably with those of most longitudinal studies reported in the field, including interview studies. In the coming years, in an effort to increase response rates (or at least stem the general response rate erosion mentioned above) we plan to experiment with offering respondents the option of responding online to determine the extent to which web-based data collection affects response rates and/or data quality.

Retention rates in the biennial follow-ups of respondents modal ages 19–30 (corresponding to the first six follow-ups) decline with the length of the follow-up interval. For the five surveys from 2006 to 2010, the response rate in the first follow-up (corresponding to one to two years past high school) averaged 54%, and for the second through sixth follow-ups (corresponding to 3–12 years past high school) response rates averaged 49% of the originally selected panel. (Among long-term respondents—the 35-, 40-, 45-, and 50-year-olds—retention rates are quite good, apparently because some of the decline over time in retention rates reflects cohort differences.) In sum, the response rates attained under the current design range from respectable to quite good, especially when the low-cost nature of the procedure, the long time intervals, the modest payment, and the substantial length of the questionnaires are taken into account. More importantly, the evidence discussed next leaves us confident that the data resulting from these follow-up panels are reasonably accurate, which brings us to our adjustments for panel attrition and the comparison of our results with those from other sources.

The Impact of Panel Attrition on Research Results. An important purpose of the MTF panel study is to allow estimation of drug prevalence rates among American high school graduates at various age levels. Thus, we have always been concerned about making the appropriate adjustments to account for panel attrition. In essence, our standard adjustment process is a poststratification procedure in which we reweight the data obtained from the follow-up samples in such a way that, when reweighted, the distribution of their 12th-grade answers on a given drug matches the original distribution of use observed for that drug based on *all* participating high school seniors. This procedure is carried out separately for cigarettes, alcohol, and marijuana, as well as other illicit drugs (combined). As expected, it produces prevalence estimates in the follow-up data that are somewhat higher than those uncorrected for attrition, indicating a positive association between drug use and panel attrition. However, the adjustments are relatively modest.

Attrition rates by levels of 12th grade substance use differ some, but less than one might expect. For example, among all respondents who had never used marijuana, an average of 79% of the classes of 1976–1998 participated in the first follow-up. The proportion responding was somewhat lower among those who had used marijuana once or twice in the last 12 months (75%). This proportion decreased gradually with increasing levels of marijuana use; but even among those who used marijuana on 20 or more occasions in the last 30 days in 12th grade, 67% participated in the first follow-up. The corresponding participation rates for the same drug use strata at the fourth follow-up (i.e., at modal ages 25–26) were 66%, 63%, and 56%, respectively. Thus, even among those who were active heavy users of marijuana in high school, response rates at the fourth follow-up were only 10 percentage points lower than among those who had never used marijuana by 12th grade. That is not to say that we assume all types of drug users remain in the panels at comparably high rates. We believe that people who become dependent on or addicted to heroin, cocaine, or methamphetamine are unlikely to be retained in reasonable

proportions. That is why we are careful not to quantify or characterize these special segments of the population; but we note that they constitute very low proportions of the adult population.

As a validation of our panel data on drug use, we compared MTF prevalence rates with those from the National Survey on Drug Use and Health (NSDUH) which provides the best available comparison data because it is also based on national samples and uses cross-sectional surveys that do not have panel attrition. Using the 2009 NSDUH data, we compared the prevalence rates on a set of drugs—cigarettes, alcohol, marijuana, and cocaine—for which there was reasonable similarity in question wording across the two studies. These comparisons showed a high degree of comparability in the prevalence estimates of the two studies, particularly with the post-stratification procedure applied to the MTF data (Johnston et al., 2012).

In addition, attrition in the MTF panel is not necessarily as great a problem as nonresponse is in a cross-sectional study. In the MTF panel we know a great deal about each of the follow-up nonrespondents, including their substance use, based on a lengthy questionnaire administered in 12th grade (and, for many, in subsequent years as well). Thus, adjustments can be made utilizing data that are highly informative about the missing individuals.

Effects on Relational Analyses. While differential attrition (uncorrected) may contribute to some bias in point estimates and other univariate statistics, such attrition tends to have less influence on bivariate and multivariate statistics (Goudy, 1976). This was found to be true in a secondary analysis of data from seven panel studies that followed adolescents over time (Cordray & Polk, 1983); and we have found this to be true in our MTF panel analyses (Jager et al., in press; Merline et al., 2008a; Merline et al., 2008b; Bryant et al., 2000; Pilgrim et al., 2006; Safron et al., 2001; Schulenberg et al., 1994; Schulenberg et al., 2005; Staff et al., 2010).

Limitations

Sample Coverage. There are certain limitations to the present study for attempting to quantify HIV/AIDS-related risk and protective behaviors in the general population. Perhaps the major limitation derives from the sample under study, because MTF does not include the 11% to 15% or so of each high school class cohort that fail to graduate. Although our coverage includes the great majority of the population of interest (young adults who recently entered their 20s), an important and on average somewhat more deviant segment of the population is not covered (high school dropouts). In addition, panel attrition is a limitation, but techniques have been used here to help compensate for the effects; they are described below.

These limitations likely lower the estimates of risk behaviors from what their values would be if the entire population of 21- through 30-year-olds in the United States could be surveyed, but it is difficult to quantify by how much. (We believe that we do a better job of characterizing the original target population, which is high school graduates.) However, because the school dropout rates have changed rather little since MTF began, and panel retention rates tend to change very slowly, we believe that the *trend* estimates—which ultimately will be among the most important

results for policy purposes—will be little affected by these omissions from the sample. This is particularly true given our procedures for compensating for panel loss.[2]

Validity. The sensitive nature of questions about certain risk behaviors may affect the validity of the data reported. Recognizing this, we provided an introduction to the section of the questionnaire dealing with HIV/AIDS risk and protective factors explaining why these questions are important in helping us to increase our understanding of the HIV/AIDS epidemic. The protections of confidentiality are re-emphasized by reminding respondents that their answers are never connected with their names and inviting respondents to leave blank any questions that they "do not wish to answer." The decrement in response rates between the preceding nonsensitive questions and those in this section is very small—on the order of about one percentage point for five questions, and about 2 percentage points for two other questions—suggesting that the great majority of respondents feel willing and able to answer the potentially sensitive questions. The question with the highest decrement (3.4 percentage points) concerns the use of condoms. We believe that the slightly higher nonresponse rate may be due to high variability in use of condoms, making the question difficult to answer. The missing data rate regarding condom use is particularly high for females having only female sex partners, for whom this question may not be applicable. The question on needle sharing shows the second highest increment in nonresponse (2.6 percentage points); however, a portion of the increment (1.0 percentage points) is attributable to respondents who indicate no history of drug injection in the previous question and may thus skip the question on needle sharing. The corrected increment in nonresponse for this question is also around 1.6 percentage points**.**

Sample Sizes and Trend Estimation for Young Adults (Ages 21–30)

The prevalence and, when available, the frequency of HIV/AIDS-related behaviors in the general population can now be established for the years of 2004 through 2011 combined. Having eight years of data is valuable because of the low prevalence rate for some of the behaviors (in particular, for the intersection of some behaviors); the use of multiple years of data increases estimate precision. Because the intersection of some of the behaviors is of particular importance, we report the bivariate associations among them, though the low numbers of cases still limit to some degree the conclusions that can be reached. Over time the case counts will continue to accumulate and allow more detailed analyses.

For estimates based on one or two years of data, the number of cases or observations is equivalent to the number of different or distinct individuals surveyed. However, for estimates based on all years combined, the number of different individuals is lower than the number of cases or observations. Since individuals are surveyed every two years, some individuals contribute more than one questionnaire over time. Thus, for estimates using data from 2004 through 2011, a single individual can contribute to up to four waves of data. *The total number of weighted observations for 2004 through 2011 is 38,596, but the total number of unique individuals is 16,842. The weighted Ns reported in each table refer to observations and not individuals.*

[2]According to U.S. Census data, high school completion rates have been quite constant at 85% since 1972 for persons 20–-24 years old. (Younger age brackets are less appropriate to use because they include some young people who are still enrolled in high school.) However, since 2002 there has been a very gradual increase in completion rates, reaching 89.0% by 2010. U.S. Census (various years*). Current population reports, Series P-20,* various numbers. Washington, DC: U.S. Government Printing Office.

It should be noted that we also examined the data for each of the eight years (2004–2011) separately to look for signs of change in prevalence levels, and did not find much evidence of systematic trending in any of the risk or protective behaviors under study during this interval. It is encouraging, though, that the univariate distributions replicate quite well across years, which provides powerful evidence of estimate reliability.

Sample Sizes for Respondents Ages 35 and 40

For those of modal age 35, four years of data have been collected—2008 through 2011 (weighted N = 3,249), and for those of modal age 40 there are two years of data (2010–2011; weighted N = 1,813). The shorter intervals and lower case counts at these ages make some prevalence estimation, and particularly trend estimation, difficult.

Adjusting for the Effects of Panel Attrition

In chapter 3 of *Volume II* we described the procedures used to adjust the substance use estimates to eliminate (insofar as possible) the effects of panel attrition. In the case of substance use estimates, we have data on the prevalence and frequency of the same behaviors among all respondents at 12th grade. This permits a *poststratification* procedure in which we reweight the obtained follow-up samples such that the reweighted distribution of their *senior-year* responses reproduces the original distribution obtained from the *entire* 12th-grade sample for the behavior under consideration.

However, measures of non-drug-using variables under consideration in this monograph were not included in the 12th-grade surveys, so this form of poststratification is unworkable. Instead, we have implemented a different poststratification reweighting procedure for the follow-up respondents, one in which we attempt to correct for their differential retention in the panels as a function of demographic and other characteristics that *were* measured in 12th grade. For example, males have a somewhat lower retention rate than females, which means that their proportion in the attained follow-up sample is lower than it was in the original 12th-grade in-school survey. We are able to correct for that difference by up-weighting the data from all males who *did* continue in the panel study, so that males will remain in the same proportion in the panel as they were when the panel was first selected.

Using this strategy, we *simultaneously* correct for differential attrition using multiple variables identified as being related to attrition. To do so, we calculate the retention rate for the various cells defined by the intersection of these variables and then weight the respondents in each cell by the reciprocal of the retention rate found for the people who belong in that cell. These adjustments generate a newly weighted panel with frequency distributions on the variables used in this reweighting procedure (e.g., gender or grade point average in high school) that reproduce those of the original 12th-grade sample. As a practical matter, the number of variables used in this procedure must be limited to some extent by the total sample size, lest certain cells become too small to be reliably reweighted.

The variables that we use for defining the cells are as follows: gender (male/female), ethnicity (White/non-White), grade point average in 12th grade (low/medium/high), and illicit drug use in 12th grade (none/marijuana only/any other illicit drug). The first two variables were prespecified,

while the latter two were chosen from a larger set entered into a regression analysis in which they emerged as the strongest predictors of retention rate.

These four variables generate 36 nonoverlapping categories (or cells) of individuals that can be reweighted to correct for differential rates of attrition. Retention rates in each of the 36 cells are then calculated based on the number of people in each cell in the *original* panel and the number who subsequently provided data at the follow-up; the participating members of each cell are assigned a new weight that is the reciprocal of the retention rate—that is, one divided by the retention rate. (For example, if White males with low grades and illegal drug use other than marijuana are represented in the retained panel at a 50% retention rate, each of the respondents in that cell would be given a weight of two.) This new weight is then multiplied by a separate individual weight that corrects for any differential probability in being selected into the panel originally. A particular advantage to using this procedure is that it takes into account any interactions among the predictor variables, such as an interaction between gender and race/ethnicity.

With the resulting weight, we have a total weighted *N* (sample size) equal to the *original* panel size, not the actual *retained* panel, which means that we would be overstating the accuracy with which we are making prevalence estimates. Thus, in a final step, all individual weights are then multiplied by the overall sample retention rate to bring the weighted sum of cases down to the actual number of individually weighted cases still in the panel. This entire correction procedure is carried out separately for each year.

We consider this correction procedure to be appropriate in this circumstance, but we caution the reader that it is not possible to correct entirely for the effects of panel attrition for two reasons. First, specific to our relatively small sample for these measures, we cannot adjust for all measured variables that might predict retention, because we are limited as to the number of cells that can reasonably be generated to which to assign weights. Second, and more generally, even with a prediction model that accounts for nearly all of the variance in retention, there still could be some unmeasured characteristics that differentiate the people in each cell who do and do not remain in the study. As we stated earlier, one of the most important uses of these data will be to track historical *changes* in the major HIV/AIDS risk and protective behaviors in the general population, a purpose for which these data are well suited, because these uncorrected factors are likely to be fairly constant across time.

Significance Testing Protocol

All significance tests referred to in this monograph are based on standard testing procedures that do not take account of the complex sampling design used in the initial sampling of 12th-grade students. Because the follow-up samples represent only a small sub-sample of the original clustered samples, design effects are quite small and generally ignorable. Significance tests on trends do take account of multiple responses from individuals. Also, nominal significance levels are used with no correction for multiple tests. Thus, nominal levels may be somewhat overstated; however, we take care to ascertain that any findings cited as statistically significant appear valid by examining multiple years, multiple cohorts, and general internal consistency.

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Chapter 4

PREVALENCE/FREQUENCY OF RISK BEHAVIORS

In this section we present and discuss the prevalence and frequency of three HIV/AIDS-related risk behaviors among respondents aged 21 to 30 in the MTF follow-up surveys *combined*.[3] Results are presented in Tables 1 and 2. The 'a' tables (i.e., 1a, 2a) provide the data for young adults aged 21 to 30 based on data from 2004–2011. The 'b' tables provide the data for 35-year-olds based on data from 2008–2011. The 'c' tables provide the data for 40-year-olds based on data from 2010 and 2011. We present the 'a,' 'b,' and 'c' versions of each table together to facilitate comparisons across the age groups. In those comparisons, it is important to recognize that the data for the three age groups come from different ranges of years, and also from different class cohorts.

We present data on the combined samples for each age group and for males and females separately within each age group. The young adult sample from 2004 through 2011 has a total weighted *N* of 17,191 observations. The sample of 35-year-old respondents from 2008 through 2011 has a total weighted *N* of 3,249, and for those of modal age 40 from 2010 and 2011, the total weighted *N* is 1,813. (As noted earlier, the number of *observations* is larger than the number of different *individuals* because some participants were surveyed more than once and thus account for more than one observation.)

Results are included for three behaviors related to HIV-risk to the individual (and potentially to others[4]): injection drug use (needle sharing in particular), men having sex with men (MSM), and having sex with multiple partners. Sharing needles for injection drug use as reported by the MTF panel samples ages 21 through 40 is described below. Condom use, one of the key behaviors in having protected sex, is covered in the next chapter on protective behaviors.

Needle Sharing

The risk of catching or transmitting a number of blood-borne diseases, including HIV, emerges when injection drug use is combined with the sharing of needles. Immediately following the MTF survey questions about injecting illicit drugs, discussed in the next section, the question about needle *sharing* is asked: “Have you ever taken such drugs using a needle that you knew (or suspected) had been used by someone else before you used it?”

[3]This combining of all available years of data provides a much needed increase in total numbers of cases, compared with reporting just the most recent year or two. As will be seen in the later section on trends, the results are sufficiently stable to warrant this combining across years.

[4]According to the CDC (http://www.cdc.gov/hiv/topics/surveillance/basic.htm#hivaidsexposure), the estimated number of cases of HIV infection in the U.S. in 2010 by transmission category was as follows: 28,782 for MSM, 12,875 for heterosexual contact, 3,766 for injection drug use, 1,443 for both MSM and injection drug use, and 47 for other transmission routes including blood transfusion, hemophilia, and perinatal exposure.

- The proportion of 21- to 30-year-olds who say they have ever shared needles in this way during their lifetime is 0.5% overall—0.5% of males and 0.4% of females (Table 1a). As noted in the next section, 1.6% of the full samples say they have ever injected a drug, so this indicates that a minority of the people injecting any of the several drug classes mentioned in the question (heroin, cocaine, amphetamines, or steroids) shared a needle at some time.

- The proportion of 21- to 30-year-olds who say that they have shared needles in the prior 12 months is 0.1%, with 0.2% of males and 0.1% of females reporting such behavior (a non-significant gender difference). This compares to 0.5% who said that they have injected a drug in the prior 12 months, so only about one fifth of past year injectors shared a needle during that interval.

- Males appear more likely than females to have engaged in injecting drugs and sharing needles, though the gender differences in needle sharing are not large.

- The lifetime prevalence rates for needle sharing are lower among the 35- and 40-year-olds than among the young adults. Lifetime prevalence is estimated to be 0.3% and 0.1%, respectively, compared to 0.5% among young adults (Tables 1b and 1c). This could be due to cohort-effects—lasting differences between class cohorts.

- In sum, needle-sharing behavior appears to have a very low prevalence among high school graduates ages 21 to 30, and even lower among 35- and 40-year-olds. It seems likely that the rates are an underestimate for the entire population in these age ranges due to the omission of high school dropouts, the likelihood that drug-addicted users would be more likely than average to leave the study, and the possibility of some underreporting of this behavior. But while the prevalence rates of needle sharing are low, they can still translate to sizable numbers of people engaging in shared needle use. According to the 2010 Census, there are about 43 million Americans ages 21 to 30; just 0.5% of this group would constitute over 200,000 people.

Injection Drug Use

While not itself a vector of HIV transmission, the amount of illicit injection drug use determines the pool of eligible persons from which the high-risk behavior of needle sharing is drawn. The question to respondents reads, “On how many occasions (if any) have you taken any drugs by injection with a needle (like heroin, cocaine, amphetamines, or steroids) in your lifetime? Do not include anything you took under a doctor’s orders.” A sequel question asks about such behavior in the prior 12-month interval. Trends in the prevalence of these behaviors would be indicative of changes in the pool of persons at risk for *sharing* of needles.

- In the eight-year (2004–2011) combined sample of young adults aged 21–30, 1.6% report having *ever* used any drug by injection without medical supervision (Table 1a). There is a fair-sized gender difference—2.4% of males and 0.9% of females indicate such behavior. The percentage saying they injected on 40 or more occasions is 0.4% overall—0.6% for males and 0.3% for females. Therefore, a relatively limited segment—about 1 in every

60—of respondents has ever used an illicit drug by injection; a smaller proportion—about 1 in every 250 respondents—reports an extended pattern of use as indicated by use on 40 or more occasions.

- The proportions of young adults who have injected drugs during the *past 12 months* without medical supervision is considerably smaller: 0.5% overall—1 in every 200 respondents—including 0.8% of males and 0.3% of females (a highly significant gender difference). The proportions using 40 or more times in the past 12 months are 0.2% overall—0.2% for males, and 0.1% for females. It is interesting to note that the proportional difference between the genders is larger for having injecting drugs in their lifetime (2.4% of males versus 0.9% of females) than it is for having ever shared needles (0.5% of males versus 0.4% of females).

- In the two older age strata included in this report—35- and 40-year-olds (shown in Tables 1b and 1c, respectively)—the lifetime prevalence rates for having ever injected drugs is fairly similar to that for the young adults (1.4% and 1.3% compared to 1.6%). Also, females report considerably lower prevalence rates than males. Compared to the young adults, annual prevalence of injection is lower among 35-year-olds and lower still among the 40-year-olds. (The difference between the three age groups is confounded by the years of measurement and the class cohorts involved, suggesting that these differences across the three age groups may be more than just cohort or age differences.)

Sex with Multiple Partners

Having sex with multiple partners is another behavior that increases the risk of HIV transmission. The question to respondents is, "During the last 12 months, how many sex partners have you had? (This includes vaginal, oral, or anal sex.)" Three types of sexual activity are specifically mentioned in this question because all can involve the transmission of HIV, though they vary in the degree of risk involved. Results are provided in Tables 2a, 2b, and 2c.

- Roughly one quarter (24%) of the sample of young adults ages 21 to 30 report that they have had multiple (two or more) sex partners in the prior 12 months—28% of males and 22% of females (Table 2a).

- About one seventh (15%) of 21- to 30-year-old respondents reported not having any sex partners during the prior 12 months—16% of males and 13% of females.

- The most common answer by far to this question was having just one partner during the year (61% overall), with a lower proportion of males (57%) than females (65%) giving this answer.

- While having even one sex partner is not without risk, the risk rises with an increased number of partners. About one in ten young adults report that they had a total of two partners during the past 12 months (9.4% of males and 9.9% of females); 5.7% report three partners (6.3% of males and 5.1% of females); and about one in eleven (9.0%) report having four or more partners (11.9% of males and 6.6% of females). Very few

report having more than 20 partners in the prior year (0.7% of males and less than 0.1% of females).

- The reported numbers of sex partners among 35- and 40-year-olds (Tables 2b and 2c) is substantially lower than among the young adults. The proportion reporting having had more than one partner is 24.4% among young adults, 12.1% among 35-year-olds, and 9.7% among 40 year olds. The proportions reporting four or more sex partners during the year falls from 9.0% among young adults to 4.1% among 35-year-olds, to 3.3% among 40-year-olds. This strongly suggests that potential exposure to HIV infection through multiple sexual contacts declines sharply between ages 21 and 40—a finding that replicates a similar one from the National Survey of Family Growth (Chandra, et al., 2012, p.15. See also http://www.census.gov/compendia/statab/2012/tables/12s0096.pdf)

- In these older age strata, males continue to be more likely than females to report multiple sex partners (14.1% vs. 10.2%, respectively at age 35, and 10.9% vs. 8.7% at age 40). They also remain more likely to report four or more partners in the prior year (6.0% vs. 2.2% at age 35, and 4.5% vs. 2.3% at age 40).

Men Having Sex with Men and Other Sexual Behaviors

Because males who have sexual contact with other males have been at particular risk of contracting and transmitting HIV, we also looked at subgroups by the different gender combinations. We distinguished six configurations: males with females exclusively, males with males exclusively, males with partners of both genders, females with males exclusively, females with females exclusively, and females with partners of both genders. For both male and female respondents the case counts turn out to be quite small in the two categories that involve sexual contact with partners of the *same* gender, so the reader is cautioned to pay particular attention to the numbers of observations for these groups. Only people reporting that they have had sexual contact with one or more partners in the prior 12 months were asked the question: "During the last 12 months, have your sex partner or partners been . . . ." The answer alternatives are: "exclusively male," "both male and female," and "exclusively female." See Tables 2a, 2b, and 2c for the results.

- A little over 5% of males indicate some sexual contact with other males during the last 12 months—4.3% saying that their partners were males exclusively and 0.9% saying that they had both male and female partners.

  (Note that because of the low prevalence rates for these behaviors, the weighted numbers of cases is limited: a total of 353 observations from male respondents who reported having *any* sexual contact with other males—292 observations of men having sex *exclusively* with other males, and 61 observations of men having sex with both genders. The corresponding weighted numbers of *different individuals* are 159, 125, and 34. For data on the numbers of sex partners each of these groups reported, see Table 2a.)

- Of the young adult respondents having one or more sex partners in the prior 12 months (85% of the total sample; 84% of males, 87% of females), 95% of males reported that

their partners were exclusively female, and almost exactly the same proportion (96%) of females indicated that their partners were exclusively male.

- Among females, 4.0% reported having any female sex partners—2.1% of all female observations indicated female partners exclusively and 1.9% indicated that their partners were of both genders—almost an even split, unlike the case for males.

  (Again, note that the numbers of reports available for study are limited: 314 reports of having any sexual contact with other females, 167 reports of having sex with other females exclusively, and 147 reports of having sex with both female and male partners. The corresponding weighted numbers of different individuals are 153, 75, and 78.)

- Once more, males are at greater risk of acquiring or transmitting HIV than females (a) because males are more likely to engage in same-gender sexual activity, and (b) because male-to-male sex almost certainly carries a greater likelihood of HIV transmission than female-to-female or heterosexual sex.

- Among the 35- and 40-year-olds who reported sex with one or more partners, the proportions of males reporting sex exclusively with males in the past 12 months are similar to those observed among 21- to 30-year-olds (3.6% and 4.7% respectively compared to 4.3% among the young adults). The proportion of 35-year-old males reporting sex with partners of *both genders* is similar to the young adults (both at 0.9%), but lower among 40-year-olds at 0.1%. These estimates are based on small sample sizes.

- Among females, the proportion reporting sex in the prior year exclusively with female partners was 1.7% among 35-year-olds and 1.2% among 40-year-olds, compared with 2.1% among the young adults. The proportion of females reporting having sex with partners of both genders was 0.8% and 1.2%, compared to 1.9% among young adults. There appears to be some decline in the reporting of female-to-female and bisexual sex in the older groups; please note that the samples are much smaller in these groups and the estimates have a higher level of sampling error.

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TABLE 1a
Injection Drug Use and Needle Sharing
Total and by Gender
among Respondents of Modal Ages 21–30
in 2004–2011[a] Combined

(Entries are percentages.)

	Total	Male	Female
Lifetime Frequency of Injecting			
On how many occasions (if any) have you taken any drugs by injection with a needle (like heroin, cocaine, amphetamines, or steroids) in your lifetime? Do not include anything you took under a doctor's orders.			
0 Occasions	98.4	97.6	99.1
1–2	0.5	0.6	0.4
3–5	0.2	0.4	0.1
6–9	0.2	0.3	0.1
10–19	0.2	0.3	*
20–39	0.1	0.3	*
40+ Occasions	0.4	0.6	0.3
Weighted N =	*17,191*	*8,087*	*9,104*
Annual Frequency of Injecting			
On how many occasions (if any) have you taken any drugs by injection with a needle (like heroin, cocaine, amphetamines, or steroids) during the last 12 months? Do not include anything you took under a doctor's orders.			
0 Occasions	99.5	99.2	99.7
1–2	0.1	0.1	0.1
3–5	0.1	0.1	*
6–9	0.1	0.1	*
10–19	0.1	0.1	*
20–39	0.1	0.1	*
40+ Occasions	0.2	0.2	0.1
Weighted N =	*17,199*	*8,091*	*9,109*
Lifetime and Annual Needle Sharing			
Have you ever taken such drugs using a needle that you knew (or suspected) had been used by someone else before you used it?			
Yes, in the last 12 months	0.1	0.2	0.1
Yes, but not in the last 12 months	0.3	0.3	0.3
No, never	99.5	99.5	99.6
Weighted N =	*17,041*	*8,013*	*9,028*

Source. The Monitoring the Future study, the University of Michigan.

Notes. ' * ' indicates a prevalence rate of less than 0.05%.

[a]In 2004–2006, the HIV questions were included in two questionnaire forms. In 2007, these questions were added to a third questionnaire form.

TABLE 1b
Injection Drug Use and Needle Sharing
Total and by Gender
among Respondents of Modal Age 35
in 2008–2011[a] Combined

(Entries are percentages.)

Lifetime Frequency of Injecting *On how many occasions (if any) have you taken any drugs by injection with a needle (like heroin, cocaine, amphetamines, or steroids) in your lifetime? Do not include anything you took under a doctor's orders.*	Total	Male	Female
0 Occasions	98.6	97.9	99.2
1–2	0.6	0.8	0.5
3–5	0.2	0.3	0.1
6–9	*	0.1	*
10–19	0.2	0.3	0.1
20–39	0.1	0.1	*
40+ Occasions	0.3	0.5	0.1
Weighted N =	*3,249*	*1,554*	*1,696*
Annual Frequency of Injecting *On how many occasions (if any) have you taken any drugs by injection with a needle (like heroin, cocaine, amphetamines, or steroids) during the last 12 months? Do not include anything you took under a doctor's orders.*			
0 Occasions	99.7	99.4	99.9
1–2	0.1	0.1	*
3–5	*	*	*
6–9	0.1	0.3	*
10–19	*	*	*
20–39	*	0.1	*
40+ Occasions	0.1	0.1	0.1
Weighted N =	*3,250*	*1,554*	*1,697*
Lifetime and Annual Needle Sharing *Have you ever taken such drugs using a needle that you knew (or suspected) had been used by someone else before you used it?*			
Yes, in the last 12 months	*	*	0.1
Yes, but not in the last 12 months	0.2	0.4	0.1
No, never	99.7	99.6	99.8
Weighted N =	*3,246*	*1,552*	*1,693*

Source. The Monitoring the Future study, the University of Michigan.

Notes. ' * ' indicates a prevalence rate of less than 0.05%.

[a]In 2008, the HIV questions were added to one half of the questionnaires administered to the 35-year-old respondents. In 2009 and after, these questions were included in all questionnaires for this group.

TABLE 1c
Injection Drug Use and Needle Sharing
Total and by Gender
among Respondents of Modal Age 40
in 2010–2011[a] Combined

(Entries are percentages.)

Lifetime Frequency of Injecting *On how many occasions (if any) have you taken any drugs by injection with a needle (like heroin, cocaine, amphetamines, or steroids) in your lifetime? Do not include anything you took under a doctor's orders.*	Total	Male	Female
0 Occasions	98.7	98.1	99.2
1–2	0.6	0.9	0.4
3–5	0.2	0.2	0.2
6–9	0.2	0.4	*
10–19	0.1	0.1	*
20–39	0.1	0.2	*
40+ Occasions	0.1	0.1	0.1
Weighted N =	*1,813*	*873*	*940*
Annual Frequency of Injecting *On how many occasions (if any) have you taken any drugs by injection with a needle (like heroin, cocaine, amphetamines, or steroids) during the last 12 months? Do not include anything you took under a doctor's orders.*			
0 Occasions	99.9	99.8	100.0
1–2	*	0.1	*
3–5	*	0.1	*
6–9	*	*	*
10–19	*	*	*
20–39	*	*	*
40+ Occasions	*	*	*
Weighted N =	*1,814*	*874*	*940*
Lifetime and Annual Needle Sharing *Have you ever taken such drugs using a needle that you knew (or suspected) had been used by someone else before you used it?*			
Yes, in the last 12 months	*	*	*
Yes, but not in the last 12 months	0.1	0.2	0.1
No, never	99.9	99.8	99.9
Weighted N =	*1,811*	*873*	*939*

Source. The Monitoring the Future study, the University of Michigan.

Notes. ' * ' indicates a prevalence rate of less than 0.05%.

[a]The HIV questions were added to the questionnaires for 40-year-olds beginning in 2010.

TABLE 2a
Number of Sex Partners and Gender of Sex Partners
Total and by Gender
among Respondents of Modal Ages 21–30
in 2004–2011[a] Combined

(Entries are percentages.)

	Total	Male	Female
Number of Partners in Last 12 Months			
During the LAST 12 MONTHS, how many sex partners have you had? (This includes vaginal, oral, or anal sex.)			
None	14.6	15.9	13.4
One	61.0	56.5	65.0
Two	9.7	9.4	9.9
Three	5.7	6.3	5.1
Four	3.7	4.3	3.1
5–10	4.2	5.7	2.8
11–20	0.7	1.1	0.4
21–100	0.3	0.5	0.1
More than 100	0.1	0.2	*
Weighted N =	*17,153*	*8,067*	*9,085*
Gender of Partners in Last 12 Months[b]			
During the LAST 12 MONTHS, have your sex partner or partners been …			
Exclusively male?	53.5	4.3	96.0
Both male and female?	1.4	0.9	1.9
Exclusively female?	45.1	94.8	2.1
Weighted N =	*14,635*	*6,783*	*7,852*

Source. The Monitoring the Future study, the University of Michigan.

Notes. ' * ' indicates a prevalence rate of less than 0.05%.

[a]In 2004–2006, the HIV questions were included in two questionnaire forms. In 2007, these questions were added to a third questionnaire form.

[b]Percentages based on those reporting sex with one or more partners during the last 12 months. Those reporting no partners are omitted.

TABLE 2b
Number of Sex Partners and Gender of Sex Partners
Total and by Gender
among Respondents of Modal Age 35
in 2008–2011[a] Combined

(Entries are percentages.)

Number of Partners in Last 12 Months *During the LAST 12 MONTHS, how many sex partners have you had? (This includes vaginal, oral, or anal sex.)*	Total	Male	Female
None	9.1	9.7	8.6
One	78.8	76.2	81.2
Two	4.7	4.5	4.8
Three	3.3	3.5	3.1
Four	1.8	2.7	1.0
5–10	1.6	2.2	0.9
11–20	0.4	0.6	0.2
21–100	0.3	0.4	0.1
More	*	0.1	*
Weighted N =	*3,233*	*1,543*	*1,689*
Gender of Partners in Last 12 Months[b] *During the LAST 12 MONTHS, have your sex partner or partners been …*			
Exclusively male?	52.8	3.6	97.4
Both male and female?	0.9	0.9	0.8
Exclusively female?	46.3	95.5	1.7
Weighted N =	*2,917*	*1,387*	*1,531*

Source. The Monitoring the Future study, the University of Michigan.

Notes. ' * ' indicates a prevalence rate of less than 0.05%.

[a]In 2008, the HIV questions were added to one half of the questionnaires administered to the 35-year-old respondents. In 2009 and after, these questions were included in all questionnaires for this group.

[b]Percentages based on those reporting sex with one or more partners during the last 12 months. Those reporting no partners are omitted.

TABLE 2c
Number of Sex Partners and Gender of Sex Partners
Total and by Gender
among Respondents of Modal Age 40
in 2010–2011[a] Combined

(Entries are percentages.)

Number of Partners in Last 12 Months *During the LAST 12 MONTHS, how many sex partners have you had? (This includes vaginal, oral, or anal sex.)*	Total	Male	Female
None	11.1	9.7	12.3
One	79.2	79.4	79.0
Two	4.5	4.1	4.8
Three	1.9	2.3	1.6
Four	1.2	1.3	1.2
5–10	1.4	2.2	0.6
11–20	0.5	0.7	0.5
21–100	0.2	0.3	*
More than 100	*	*	*
Weighted N =	*1,813*	*872*	*942*
Gender of Partners in Last 12 Months[b] *During the LAST 12 MONTHS, have your sex partner or partners been …*			
Exclusively male?	52.1	4.7	97.6
Both male and female?	0.7	0.1	1.2
Exclusively female?	47.2	95.1	1.2
Weighted N =	*1,601*	*784*	*817*

Source. The Monitoring the Future study, the University of Michigan.

Notes. ' * ' indicates a prevalence rate of less than 0.05%.

[a]The HIV questions were added to the questionnaires for 40-year-olds beginning in 2010.

[b]Percentages based on those reporting sex with one or more partners during the last 12 months. Those reporting no partners are omitted.

Chapter 5

INTERSECTION OF RISK BEHAVIORS

One goal of MTF is to determine to what extent the various HIV-related risk behaviors overlap with one another, and to determine what proportion of the population is at heightened risk of HIV transmission as a result. In this chapter, we report several pairwise combinations of risk factors.

Needle Sharing by Gender of Sex Partners

Needle sharing and male-to-male sex are known to be among the most important vectors for the spread of HIV.

- Table 3a provides information on young adults on injection drug use and needle sharing by the six categories of gender of partners in the prior 12 months—men who had sex exclusively with women, exclusively with men, or with both men and women; and women who had sex exclusively with men, exclusively with women, or with both men and women. The very small numbers of cases in the important group of those having sexual relations with both genders again make any results tentative and suggestive.

- Keeping in mind the small sample sizes, it appears that among young adults both injecting and needle sharing tend to be highest among those who engage in sex with both genders. This holds true for both male and female respondents.

- The number of cases of the 35- and 40-year-olds who report having had sex with both genders is too low to allow accurate estimation (Tables 3b and 3c).

- Young adult males who report having exclusively male partners have about the same lifetime and annual prevalence rates of injection as males having exclusively female partners (Table 3a). They have a significantly higher prevalence of needle sharing, however (1.4% vs. 0.4%). So, there is some compounding of these two types of risk among young adult males.

- Among young adult females, the lifetime, but not annual, prevalence of injecting drugs is significantly higher among those having exclusively female partners than among those with exclusively male partners (3.7% vs. 0.9%). More importantly, the lifetime prevalence of needle sharing is also significantly higher (2.8% vs. 0.3%). Interestingly, there is less difference between these two groups in the prevalence of injecting or needle sharing in the prior 12 months, so the heightened risk from needle sharing for women who have exclusively female partners appears to have occurred when they were younger.

Injection Drug Use and Needle Sharing by Number of Sex Partners

- Among young adults, the prevalence of having injected drugs either over a lifetime or in the prior 12 months rises considerably with the number of sex partners reported in the prior 12 months (Table 4a). For example, those who report zero, one, or two partners during the prior 12 months report a prevalence of injecting a drug in the prior 12 months of 0.2%, 0.2%, and 0.3%, respectively, whereas those reporting five or more partners have a prevalence of 2.9%. The association holds for both males and females.

- At ages 35 and 40 (Tables 4b and 4c) a similar positive association holds between number of sex partners in the prior 12 months and both lifetime and annual injecting of drugs (except for 40-year-old females, who report essentially zero injecting).

- Among young adults, sharing needles relates positively to the number of partners; past 12 month sharing was 0.1% or less among those who had two or fewer partners in the past 12 months, and 0.9% among those reporting 5 or more partners in that period. (See Table 4a, bottom panel). This means that needle sharers, who are at particular risk of having HIV, are more likely than others to have been exposing large numbers of partners to that risk through having sex with them.

- There are very low rates of reported needle sharing at ages 35 and 40 (Tables 4b and 4c), but lifetime rates are positively associated with number of sex partners in the prior 12 months. Those reporting five or more partners in the prior 12 months are most likely to have shared needles. (No association is found for females at age 40.)

Number of Sex Partners by Gender of Sex Partners

- We examined the number of sex partners reported as a function of the genders of those partners (Table 5a). Among sexually active young adult males, those who had sex exclusively with other males during the year (N = 291 observations), about half (48%) reported that they had only one sex partner, compared to 69% among those males who reported that they had sexual contact exclusively with females. About a fifth (19%) of males with exclusively male partners reported sexual contact with five or more partners, compared to 8% for males with exclusively female partners. Thus, although their proportion of the total population is small, and these particular findings are thus based on a small subsample, it appears that appreciable numbers of young adult males are potentially placing themselves and others at greater risk by having multiple sex partners, and this is especially true for males who have had sex exclusively with other males during the year.
- Among 35- and 40-year-old male respondents who had sex only with male partners during the year (N = 48 and 37, respectively), the same appears to be true. See Tables 5b and 5c.

- Among sexually active young adult females who had sex exclusively with other females during the year (N = 167), 77% reported having only one partner, indicating a high level of monogamy in this group. This rate is very close to the 76% who reported being

monogamous among females who had male partners exclusively. Again, these estimates are only suggestive, given the limited sample sizes involved. However, this suggests that females who have sex exclusively with females are at lower risk of contracting or transmitting HIV based both on the types of female-to-female sex practices and on the number of sex partners.

- There were insufficient numbers of 35- and 40-year-old females reporting same sex partners to provide reliable estimates (Tables 5b and 5c).

- Individuals who have sexual relations with both genders carry the risk of spreading HIV across genders, making their behavior of particular importance. The numbers of cases collected to date are very small; young adult weighted *N*s = 147 observations for females and 61 for males reporting relations with partners of both genders in the prior 12 months. Given these small numbers, the results can be considered only tentative and suggestive. Nevertheless, based on the 208 cases that report partners of both genders, the proportions reporting five or more partners appear to be quite high. (See Table 5a.)

- There are insufficient numbers among those ages 35 and 40 who report having sex partners of both genders in the prior 12 months to provide reliable estimates (Tables 5b and 5c).

TABLE 3a
Injection Drug Use and Needle Sharing
by Gender of Sex Partners in Last 12 Months
among Respondents of Modal Ages 21–30 in 2004–2011[a] Combined

(Entries are percentages.)

	MALE RESPONDENTS			FEMALE RESPONDENTS		
	Gender of Partner(s)			Gender of Partner(s)		
	Female Only	Male Only	Male and Female	Male Only	Female Only	Male and Female
Lifetime Frequency of Injecting						
On how many occasions (if any) have you taken any drugs by injection with a needle (like heroin, cocaine, amphetamines, or steroids) in your lifetime? Do not include anything you took under a doctor's orders.						
0 Occasions	97.4	97.8	85.9	99.1	96.3	93.4
1–2	0.6	0.8	3.7	0.3	1.5	2.7
3–5	0.4	0.5	*	0.1	1.4	0.2
6–9	0.3	0.2	4.5	0.1	*	0.6
10–19	0.4	*	*	*	*	0.7
20–39	0.3	*	1.9	*	*	*
40+ Occasions	0.6	0.7	3.9	0.3	0.8	2.3
Weighted N =	*6,404*	*291*	*61*	*7,516*	*166*	*147*
Annual Frequency of Injecting						
On how many occasions (if any) have you taken any drugs by injection with a needle (like heroin, cocaine, amphetamines, or steroids) during the last 12 months? Do not include anything you took under a doctor's orders.						
0 Occasions	99.2	99.1	88.9	99.8	99.5	97.0
1–2	0.1	0.3	3.1	0.1	*	1.0
3–5	0.1	*	0.7	*	*	*
6–9	0.1	*	3.9	*	*	*
10–19	0.1	*	1.9	*	0.5	0.2
20–39	0.1	*	1.6	*	*	*
40+ Occasions	0.2	0.6	*	0.1	*	1.7
Weighted N =	*6,406*	*291*	*61*	*7,520*	*166*	*147*
Lifetime and Annual Needle Sharing						
Have you ever taken such drugs using a needle that you knew (or suspected) had been used by someone else before you used it?						
Yes, in the last 12 months	0.1	0.6	1.6	0.1	0.5	1.9
Yes, but not in the last 12 months	0.3	0.7	4.4	0.3	2.3	1.2
No, never	99.6	98.6	94.0	99.7	97.2	96.8
Weighted N =	*6,347*	*291*	*60*	*7,461*	*167*	*146*

Source. The Monitoring the Future study, the University of Michigan.

Notes. ' * ' indicates a prevalence rate of less than 0.05%.

[a]In 2004–2006, the HIV questions were included in two questionnaire forms. In 2007, these questions were added to a third questionnaire form.

TABLE 3b

Injection Drug Use and Needle Sharing by Gender of Sex Partners in Last 12 Months among Respondents of Modal Age 35 in 2008–2011[a] Combined

(Entries are percentages.)

	MALE RESPONDENTS			FEMALE RESPONDENTS		
	Gender of Partner(s)			Gender of Partner(s)		
	Female Only	Male Only	Male and Female	Male Only	Female Only	Male and Female
Lifetime Frequency of Injecting						
On how many occasions (if any) have you taken any drugs by injection with a needle (like heroin, cocaine, amphetamines, or steroids) in your lifetime? Do not include anything you took under a doctor's orders.						
0 Occasions	98.0	100.0	†	99.3	†	†
1–2	0.7	*	†	0.4	†	†
3–5	0.2	*	†	0.1	†	†
6–9	0.1	*	†	*	†	†
10–19	0.2	*	†	0.1	†	†
20–39	0.2	*	†	*	†	†
40+ Occasions	0.6	*	†	0.1	†	†
Weighted N =	*1,323*	*50*	*13*	*1,484*	*26*	*13*
Annual Frequency of Injecting						
On how many occasions (if any) have you taken any drugs by injection with a needle (like heroin, cocaine, amphetamines, or steroids) during the last 12 months? Do not include anything you took under a doctor's orders.						
0 Occasions	99.5	100.0	†	99.9	†	†
1–2	0.1	*	†	*	†	†
3–5	*	*	†	0.1	†	†
6–9	0.2	*	†	*	†	†
10–19	*	*	†	*	†	†
20–39	0.1	*	†	*	†	†
40+ Occasions	0.1	*	†	0.1	†	†
Weighted N =	*1,323*	*50*	*13*	*1,485*	*26*	*13*
Lifetime and Annual Needle Sharing						
Have you ever taken such drugs using a needle that you knew (or suspected) had been used by someone else before you used it?						
Yes, in the last 12 months	*	*	†	0.1	†	†
Yes, but not in the last 12 months	0.3	*	†	0.1	†	†
No, never	99.7	100.0	†	99.8	†	†
Weighted N =	*1,320*	*50*	*13*	*1,483*	*26*	*13*

Source. The Monitoring the Future study, the University of Michigan.

Notes. ' † ' indicates that the sample size is too limited to provide reliable estimates. ' * ' indicates a prevalence rate of less than 0.05%.

[a]In 2008, the HIV questions were added to one half of the questionnaires administered to the 35-year-old respondents. In 2009 and after, these questions were included in all questionnaires for this group.

TABLE 3c

Injection Drug Use and Needle Sharing by Gender of Sex Partners in Last 12 Months among Respondents of Modal Age 40 in 2010–2011[a] Combined

(Entries are percentages.)

	MALE RESPONDENTS			FEMALE RESPONDENTS		
	Gender of Partner(s)			Gender of Partner(s)		
	Female Only	Male Only	Male and Female	Male Only	Female Only	Male and Female
Lifetime Frequency of Injecting						
On how many occasions (if any) have you taken any drugs by injection with a needle (like heroin, cocaine, amphetamines, or steroids) in your lifetime? Do not include anything you took under a doctor's orders.						
0 Occasions	98.6	87.6	†	99.1	†	†
1–2	0.5	9.2	†	0.5	†	†
3–5	0.2	0.8	†	0.2	†	†
6–9	0.1	2.4	†	*	†	†
10–19	0.1	*	†	*	†	†
20–39	0.2	*	†	0.1	†	†
40+ Occasions	0.1	*	†	0.1	†	†
Weighted N =	*741*	*37*	*1*	*793*	*10*	*10*
Annual Frequency of Injecting						
On how many occasions (if any) have you taken any drugs by injection with a needle (like heroin, cocaine, amphetamines, or steroids) during the last 12 months? Do not include anything you took under a doctor's orders.						
0 Occasions	99.9	96.8	†	100.0	†	†
1–2	*	2.4	†	*	†	†
3–5	0.1	0.8	†	*	†	†
6–9	*	*	†	*	†	†
10–19	*	*	†	*	†	†
20–39	*	*	†	*	†	†
40+ Occasions	*	*	†	*	†	†
Weighted N =	*742*	*37*	*1*	*793*	*10*	*10*
Lifetime and Annual Needle Sharing						
Have you ever taken such drugs using a needle that you knew (or suspected) had been used by someone else before you used it?						
Yes, in the last 12 months	*	*	†	*	†	†
Yes, but not in the last 12 months	0.1	2.4	†	0.1	†	†
No, never	99.9	97.6	†	99.9	†	†
Weighted N =	*742*	*37*	*1*	*793*	*10*	*10*

Source. The Monitoring the Future study, the University of Michigan.

Notes. ' † ' indicates that the sample size is too limited to provide reliable estimates. ' * ' indicates a prevalence rate of less than 0.05%.

[a]The HIV questions were added to the questionnaires for 40-year-olds beginning in 2010.

TABLE 4a
Injection Drug Use and Needle Sharing by Number of Sex Partners in Last 12 Months among Respondents of Modal Ages 21–30 in 2004–2011[a] Combined

(Entries are percentages.)

	Number of Partners in Last 12 Months				
	None	One	Two	Three or Four	Five or More
Lifetime Frequency of Injecting *On how many occasions (if any) have you taken any drugs by injection with a needle (like heroin, cocaine, amphetamines, or steroids) in your lifetime? Do not include anything you took under a doctor's orders.*					
Total					
0 Occasions	99.4	98.7	98.2	96.6	95.5
1+ Occasions	0.6	1.3	1.8	3.4	4.5
Weighted N =	*2,487*	*10,439*	*1,658*	*1,602*	*906*
Male					
0 Occasions	99.0	98.1	97.5	95.1	94.5
1+ Occasions	1.0	1.9	2.5	4.9	5.5
Weighted N =	*1,276*	*4,545*	*756*	*850*	*605*
Female					
0 Occasions	99.8	99.1	98.8	98.2	97.6
1+ Occasions	0.2	0.9	1.2	1.8	2.4
Weighted N =	*1,211*	*5,894*	*901*	*752*	*301*
Annual Frequency of Injecting *On how many occasions (if any) have you taken any drugs by injection with a needle (like heroin, cocaine, amphetamines, or steroids) during the last 12 months? Do not include anything you took under a doctor's orders.*					
Total					
0 Occasions	99.8	99.8	99.7	98.7	97.1
1+ Occasions	0.2	0.2	0.3	1.3	2.9
Weighted N =	*2,489*	*10,443*	*1,659*	*1,602*	*907*
Male					
0 Occasions	99.8	99.6	99.7	98.1	96.5
1+ Occasions	0.2	0.4	0.3	1.9	3.5
Weighted N =	*1,277*	*4,547*	*756*	*850*	*606*
Female					
0 Occasions	99.8	99.9	99.7	99.4	98.4
1+ Occasions	0.2	0.1	0.3	0.6	1.6
Weighted N =	*1,212*	*5,896*	*902*	*752*	*301*
Needle Sharing: Lifetime and Last 12 Months *Have you ever taken such drugs using a needle that you knew (or suspected) had been used by someone else before you used it?*					
Total					
Yes, in the last 12 months	0.1	*	0.1	0.4	0.9
Yes, but not in the last 12 months	0.2	0.2	0.5	0.7	0.4
No, never	99.6	99.7	99.5	98.9	98.7
Weighted N =	*2,454*	*10,365*	*1,642*	*1,589*	*897*
Male					
Yes, in the last 12 months	0.2	0.0	*	0.4	0.8
Yes, but not in the last 12 months	0.4	0.2	0.5	1.0	0.2
No, never	99.4	99.8	99.5	98.6	98.9
Weighted N =	*1,259*	*4,513*	*745*	*845*	*596*
Female					
Yes, in the last 12 months	0.1	*	0.1	0.4	1.1
Yes, but not in the last 12 months	*	0.3	0.5	0.4	0.7
No, never	99.9	99.7	99.4	99.2	98.2
Weighted N =	*1,196*	*5,852*	*897*	*744*	*300*

Source. The Monitoring the Future study, the University of Michigan.

Notes. ' * ' indicates a prevalence rate of less than 0.05%.

[a]In 2004–2006, the HIV questions were included in two questionnaire forms. In 2007, these questions were added to a third questionnaire form.

TABLE 4b
Injection Drug Use and Needle Sharing by Number of Sex Partners in Last 12 Months among Respondents of Modal Age 35 in 2008–2011[a] Combined

(Entries are percentages.)

	Number of Partners in Last 12 Months				
Lifetime Frequency of Injecting	None	One	Two	Three or Four	Five or More
On how many occasions (if any) have you taken any drugs by injection with a needle (like heroin, cocaine, amphetamines, or steroids) in your lifetime? Do not include anything you took under a doctor's orders.					
Total					
0 Occasions	98.5	99.0	97.5	95.0	94.9
1+ Occasions	1.5	1.0	2.5	5.0	5.1
Weighted N =	*294*	*2,541*	*150*	*166*	*73*
Males					
0 Occasions	97.9	98.8	94.6	91.3	93.4
1+ Occasions	2.1	1.2	5.4	8.7	6.6
Weighted N =	*149*	*1,175*	*69*	*96*	*52*
Females					
0 Occasions	99.1	99.2	100.0	100.0	98.5
1+ Occasions	0.9	0.8	*	*	1.5
Weighted N =	*145*	*1,366*	*81*	*70*	*21*
Annual Frequency of Injecting					
On how many occasions (if any) have you taken any drugs by injection with a needle (like heroin, cocaine, amphetamines, or steroids) during the last 12 months? Do not include anything you took under a doctor's orders.					
Total					
0 Occasions	99.6	99.8	98.3	98.9	98.6
1+ Occasions	0.4	0.2	1.7	1.1	1.4
Weighted N =	*294*	*2,542*	*150*	*166*	*73*
Males					
0 Occasions	99.3	99.8	96.3	98.0	98.0
1+ Occasions	0.7	0.2	3.7	2.0	2.0
Weighted N =	*149*	*1,175*	*69*	*96*	*52*
Females					
0 Occasions	100.0	99.9	100.0	100.0	100.0
1+ Occasions	*	0.1	*	*	*
Weighted N =	*145*	*1,367*	*81*	*70*	*21*
Needle Sharing: Lifetime and Last 12 Months					
Have you ever taken such drugs using a needle that you knew (or suspected) had been used by someone else before you used it?					
Total					
Yes, in the last 12 months	*	0.1	*	*	*
Yes, but not in the last 12 months	0.1	0.1	*	1.7	1.8
No, never	99.9	99.8	100.0	98.3	98.2
Weighted N =	*294*	*2,536*	*151*	*166*	*73*
Males					
Yes, in the last 12 months	*	*	*	*	*
Yes, but not in the last 12 months	*	0.2	*	3.0	1.9
No, never	100.0	99.8	100.0	97.0	98.1
Weighted N =	*150*	*1,173*	*69*	*96*	*52*
Females					
Yes, in the last 12 months	*	0.1	*	*	*
Yes, but not in the last 12 months	0.2	0.1	*	*	1.5
No, never	99.8	99.8	100.0	100.0	98.5
Weighted N =	*144*	*1,364*	*82*	*70*	*21*

Source. The Monitoring the Future study, the University of Michigan.

Notes. ' * ' indicates a prevalence rate of less than 0.05%.

[a]In 2008, the HIV questions were added to one half of the questionnaires administered to the 35-year-old respondents. In 2009 and after, these questions were included in all questionnaires for this group.

TABLE 4c

Injection Drug Use and Needle Sharing by Number of Sex Partners in Last 12 Months among Respondents of Modal Age 40 in 2010–2011[a] Combined

(Entries are percentages.)

		Number of Partners in Last 12 Months				
Lifetime Frequency of Injecting		None	One	Two	Three or Four	Five or More
On how many occasions (if any) have you taken any drugs by injection with a needle (like heroin, cocaine, amphetamines, or steroids) in your lifetime? Do not include anything you took under a doctor's orders.						
Total						
0 Occasions		99.2	98.9	100.0	95.6	91.7
1+ Occasions		0.8	1.1	*	4.4	8.3
	Weighted N =	*200*	*1,429*	*81*	*57*	*37*
Males						
0 Occasions		98.1	98.7	100.0	91.9	88.6
1+ Occasions		1.9	1.3	*	8.1	11.4
	Weighted N =	*85*	*688*	*36*	*31*	*27*
Females						
0 Occasions		100.0	99.0	100.0	100.0	100.0
1+ Occasions		*	1.0	*	*	*
	Weighted N =	*115*	*741*	*45*	*26*	*10*
Annual Frequency of Injecting						
On how many occasions (if any) have you taken any drugs by injection with a needle (like heroin, cocaine, amphetamines, or steroids) during the last 12 months? Do not include anything you took under a doctor's orders.						
Total						
0 Occasions		100.0	99.9	100.0	100.0	96.8
1+ Occasions		*	0.1	*	*	3.2
	Weighted N =	*200*	*1,430*	*81*	*57*	*37*
Males						
0 Occasions		100.0	99.9	100.0	100.0	95.6
1+ Occasions		*	0.1	*	*	4.4
	Weighted N =	*85*	*689*	*36*	*31*	*27*
Females						
0 Occasions		100.0	100.0	100.0	100.0	100.0
1+ Occasions		*	*	*	*	*
	Weighted N =	*115*	*741*	*45*	*26*	*10*
Needle Sharing: Lifetime and Last 12 Months						
Have you ever taken such drugs using a needle that you knew (or suspected) had been used by someone else before you used it?						
Total						
Yes, in the last 12 months		*	*	*	*	*
Yes, but not in the last 12 months		*	0.1	*	*	3.5
No, never		100.0	99.9	100.0	100.0	96.5
	Weighted N =	*199*	*1,431*	*79*	*57*	*37*
Males						
Yes, in the last 12 months		*	*	*	*	*
Yes, but not in the last 12 months		*	*	*	*	4.8
No, never		100.0	100.0	100.0	100.0	95.2
	Weighted N =	*85*	*691*	*34*	*31*	*27*
Females						
Yes, in the last 12 months		*	*	*	*	*
Yes, but not in the last 12 months		*	0.2	*	*	*
No, never		100.0	99.8	100.0	100.0	100.0
	Weighted N =	*114*	*741*	*45*	*26*	*10*

Source. The Monitoring the Future study, the University of Michigan.

Notes. ' * ' indicates a prevalence rate of less than 0.05%.

[a]The HIV questions were added to the questionnaires for 40-year-olds beginning in 2010.

TABLE 5a

Number of Sex Partners by Gender of Sex Partners in Last 12 Months among Respondents of Modal Ages 21–30 in 2004–2011[a] Combined

(Entries are percentages.)

	MALE RESPONDENTS			FEMALE RESPONDENTS		
	Gender of Partner(s)			Gender of Partner(s)		
Number of Partners in Last 12 Months	Female Only	Male Only	Male and Female	Male Only	Female Only	Male and Female
During the LAST 12 MONTHS, how many sex partners have you had? (This includes vaginal, oral, or anal sex.)						
None	—	—	—	—	—	—
One	68.6	48.2	10.6	76.4	77.2	6.9
Two	11.1	11.8	17.4	11.3	10.5	20.0
Three	7.3	11.1	9.3	5.6	6.7	23.5
Four	4.8	9.8	16.0	3.4	2.7	16.5
5–10	6.4	10.9	32.2	2.8	2.9	24.4
11–20	1.2	3.8	8.7	0.3	*	6.9
21 or more partners	0.6	4.3	5.8	0.1	*	2.0
Weighted N =	*6,401*	*291*	*61*	*7,525*	*167*	*147*

Source. The Monitoring the Future study, the University of Michigan.

Notes ' — ' indicates not applicable. ' * ' indicates a prevalence rate of less than 0.05%.

[a]In 2004–2006, the HIV questions were included in two questionnaire forms. In 2007, these questions were added to a third questionnaire form.

TABLE 5b

Number of Sex Partners by Gender of Sex Partners in Last 12 Months among Respondents of Modal Age 35 in 2008–2011[a] Combined

(Entries are percentages.)

	MALE RESPONDENTS			FEMALE RESPONDENTS		
	Gender of Partner(s)			Gender of Partner(s)		
	Female Only	Male Only	Male and Female	Male Only	Female Only	Male and Female
Number of Partners in Last 12 Months						
During the LAST 12 MONTHS, how many sex partners have you had? (This includes vaginal, oral, or anal sex.)						
None	—	—	†	—	†	†
One	86.3	55.2	†	89.9	†	†
Two	4.7	4.4	†	5.0	†	†
Three	3.1	14.9	†	2.7	†	†
Four	2.8	3.9	†	1.1	†	†
5–10	1.9	19.2	†	0.9	†	†
11–20	0.7	*	†	0.2	†	†
21 or more partners	0.4	2.4	†	0.1	†	†
Weighted N =	*1,318*	*48*	*13*	*1,491*	*26*	*13*

Source. The Monitoring the Future study, the University of Michigan.

Notes. ' † ' indicates that the sample size is too limited to provide reliable estimates. ' — ' indicates not applicable.

' * ' indicates a prevalence rate of less than 0.05%.

[a]In 2008, the HIV questions were added to one half of the questionnaires administered to the 35-year-old respondents. In 2009 and after, these questions were included in all questionnaires for this group.

TABLE 5c

Number of Sex Partners by Gender of Sex Partners in Last 12 Months among Respondents of Modal Age 40 in 2010–2011[a] Combined

(Entries are percentages.)

	MALE RESPONDENTS			FEMALE RESPONDENTS		
	Gender of Partner(s)			Gender of Partner(s)		
	Female Only	Male Only	Male and Female	Male Only	Female Only	Male and Female
Number of Partners in Last 12 Months *During the LAST 12 MONTHS, how many sex partners have you had? (This includes vaginal, oral, or anal sex.)*						
None	—	—	†	—	†	†
One	89.5	56.7	†	91.2	†	†
Two	4.2	9.4	†	5.0	†	†
Three	2.7	1.1	†	1.8	†	†
Four	0.8	13.3	†	1.2	†	†
5–10	1.9	14.2	†	0.4	†	†
11–20	0.7	0.8	†	0.4	†	†
21 or more partners	0.1	4.6	†	*	†	†
Weighted N =	*744*	*37*	*1*	*796*	*10*	*10*

Source. The Monitoring the Future study, the University of Michigan.

Notes. ' † ' indicates that the sample size is too limited to provide reliable estimates. ' — ' indicates not applicable.

' * ' indicates a prevalence rate of less than 0.05%.

[a]The HIV questions were added to the questionnaires for 40-year-olds beginning in 2010.

Chapter 6

PREVALENCE OF PROTECTIVE BEHAVIORS

Various precautions can diminish the likelihood of contracting and/or transmitting HIV. One, of course, is simply to avoid the high-risk behaviors already discussed. Another is to use protection against viral transmission in the form of condom use during intercourse. A third approach—getting tested for HIV—increases the likelihood that an infected individual will receive appropriate treatment and also, if the diagnosis is positive, refrain from behaviors that put others at risk of contracting the virus.

Condom Use

Respondents who indicate that they have one or more sexual partners during the prior 12 months are asked, "When you had sexual intercourse during the last 12 months, how often were condoms used? (This includes vaginal and anal sex, but not oral sex.)" The answer alternatives are: never, seldom, sometimes, most times, and always. Both genders respond to this question. (Respondents who report no sex partners in the prior 12 months are not included in the data presented here.)

- Just over half (54%) of sexually active young adult respondents report that they "seldom" or "never" used condoms during the past 12 months—with 49% of males and 58% of females giving one of these answers (Table 6a). Indeed, a large proportion (41%) indicate that they did not use condoms at all during the prior 12 months—36% of the sexually active males and 45% of the sexually active females. Higher rates of monogamy among females may help to explain their lower rate of condom use; however, their partners may or may not be monogamous, and if not, the risk to the woman increases, quite possibly without her awareness.

- Only about one third (33%) of sexually active young adults say that they used a condom "most times" or "always"—38% of males and 29% of females.

- An examination of two-year age-breaks among the 21- to 30-year-olds shows that the prevalence of condom use declines steadily with age (Table 6d). Some 75% of the 21- to 22-year-olds report some condom use in the prior year, whereas only 46% of the 29- to 30-year-olds report the same. And while 46% of the former group report using condoms "most times" or "always," only 24% of the older group say that. An increased proportion being married and/or monogamous likely explains much of this change.

- Condom use is lower among the sexually active 35-year-olds than among the young adults, with 71% of the males and 75% of the females saying that they seldom or never used condoms in the prior 12 months (Table 6b). And condom use is lower still among the sexually active 40-year-olds, with 78% of the males and 82% of the females saying that they seldom or never used condoms in the prior 12 months.

Getting Tested for HIV

Respondents were asked if they had ever been tested for HIV/AIDS; they were instructed not to include any testing that they may have undergone when they were donating blood or blood plasma. The results for young adults may be found in Tables 7a, 7b, and 7c.

- Less than half (44%) of all young adults ages 21 to 30 indicate that they have *ever* been tested for HIV outside of blood donation screening—36% of males and 50% of females. As might be expected, lifetime prevalence of HIV testing rises with age within the young adult interval: Summing across the surveys from 2004 to 2011, 30% of 21- to 22-year-olds report some testing compared to 54% of 29- to 30-year-olds (Table 7d).

- About one fifth (21%) of young adults say they have been tested in the *prior 12 months,* but there is a large gender difference in the rate of getting tested—16% of males vs. 25% of females said they have been tested in the prior 12 months (Table 7a).

- Not all of those who take HIV tests, however, actually receive their results. Asked if they have received the results of their *most recent* HIV test, 7.0% of young adults who have ever been tested say that they have not—8.5% of males and 6.0% of females. Thus, females are somewhat more likely than males to engage in this protective behavior—including obtaining the results of the tests—even though they are at somewhat less risk than males of being exposed as a function of their drug injection rates and sexual practices.

- Among 35-year-olds the lifetime prevalence of being tested for HIV is higher than among young adults (46% for males and 63% for females); and among 40-year-olds the lifetime rates are higher still for males (50%) but not for females (60%). The rate of testing in the past 12 months declines some with age across these three age strata (from 21% to 15% to 12%), but not by as much as might be supposed (Tables 7a, b, and c).

TABLE 6a
Frequency of Condom Use
Total and by Gender
among Respondents of Modal Ages 21–30
in 2004–2011[a] Combined

(Entries are percentages.)

Frequency of Condom Use in Last 12 Months[b]	Total	Male	Female
When you had sexual intercourse during the LAST 12 MONTHS, how often were condoms used? (This includes vaginal and anal sex, but not oral sex.)			
Never	40.5	36.0	44.5
Seldom	13.7	13.5	13.9
Sometimes	12.8	13.1	12.6
Most times	14.9	16.7	13.4
Always	18.0	20.8	15.6
Weighted N =	*14,512*	*6,741*	*7,772*

Source. The Monitoring the Future study, the University of Michigan.

[a]In 2004–2006, the HIV questions were included in two questionnaire forms. In 2007, these questions were added to a third questionnaire form.

[b]Percentages based on those reporting sex with one or more partners during the last 12 months. Those reporting no partners are omitted.

TABLE 6b
Frequency of Condom Use
Total and by Gender
among Respondents of Modal Age 35 in 2008–2011[a] Combined

(Entries are percentages.)

Frequency of Condom Use in Last 12 Months[b] *When you had sexual intercourse during the LAST 12 MONTHS, how often were condoms used? (This includes vaginal and anal sex, but not oral sex.)*	Total	Male	Female
Never	64.9	61.6	67.8
Seldom	8.2	8.9	7.6
Sometimes	8.9	10.1	7.8
Most times	8.2	9.6	6.9
Always	9.9	9.7	10.0
Weighted N =	*2,911*	*1,384*	*1,527*

Source. The Monitoring the Future study, the University of Michigan.

[a]In 2008, the HIV questions were added to one half of the questionnaires administered to the 35-year-old respondents. In 2009 and after, these questions were included in all questionnaires for this group.

[b]Percentages based on those reporting sex with one or more partners during the last 12 months. Those reporting no partners are omitted.

TABLE 6c
Frequency of Condom Use
Total and by Gender
among Respondents of Modal Age 40 in 2010–2011[a] Combined

(Entries are percentages.)

Frequency of Condom Use in Last 12 Months[b] *When you had sexual intercourse during the LAST 12 MONTHS, how often were condoms used? (This includes vaginal and anal sex, but not oral sex.)*	Total	Male	Female
Never	74.7	72.1	77.2
Seldom	5.4	5.8	5.0
Sometimes	5.8	6.4	5.1
Most times	6.0	6.6	5.5
Always	8.1	9.1	7.2
Weighted N =	*1,593*	*782*	*810*

Source. The Monitoring the Future study, the University of Michigan.

[a]The HIV questions were added to the questionnaires for 40-year-olds beginning in 2010.

[b]Percentages based on those reporting sex with one or more partners during the last 12 months. Those reporting no partners are omitted.

TABLE 6d

Use of Condoms in Past Year by 2-Year Age Groups among Young Adults 2004–2011[a] Combined

(Entries are percentages.)

Frequency of Condom Use in Past Year:	Age of Respondent				
	21–22	23–24	25–26	27–28	29–30
Never	24.6	32.8	40.5	50.0	53.7
Seldom	14.9	15.4	13.9	12.7	11.6
Sometimes	14.8	13.2	13.0	12.1	11.1
Most times	19.9	17.6	15.3	11.1	11.2
Always	25.8	20.9	17.3	14.0	12.4
Weighted N =	*2,803*	*2,933*	*2,862*	*2,903*	*3,010*

Source. The Monitoring the Future study, the University of Michigan.

[a]In 2004–2006, the HIV questions were included in two questionnaire forms. In 2007, these questions were added to questionnaire form.

TABLE 7a
Test for HIV, Lifetime and Last 12 Months
Total and by Gender
among Respondents of Modal Ages 21–30
in 2004–2011[a] Combined

(Entries are percentages.)

Test for HIV: Lifetime and Last 12 Months	Total	Male	Female
Have you ever been tested for HIV/AIDS? (Do not include tests that you may have had when donating blood or blood plasma.)			
Yes, in the last 12 months	20.6	15.9	24.8
Yes, but not in the last 12 months	23.0	20.2	25.4
No, never	56.4	63.9	49.8
Weighted N =	*17,274*	*8,131*	*9,143*
Received HIV Test Results[b]			
Did you receive the results of your most recent HIV/AIDS test? (We don't want to know your test results.)			
Yes	93.0	91.5	94.0
No	7.0	8.5	6.0
Weighted N =	*7,437*	*2,894*	*4,543*

Source. The Monitoring the Future study, the University of Michigan.

[a]In 2004–2006, the HIV questions were included in two questionnaire forms. In 2007, these questions were added to a third questionnaire form.

[b]Those respondents who report never having been tested for HIV are excluded from these percentages.

TABLE 7b
Test for HIV, Lifetime and Last 12 Months
Total and by Gender
among Respondents of Modal Age 35 in 2008–2011[a] Combined

(Entries are percentages.)

Test for HIV: Lifetime and Last 12 Months *Have you ever been tested for HIV/AIDS? (Do not include tests that you may have had when donating blood or blood plasma.)*	Total	Male	Female
Yes, in the last 12 months	15.2	12.1	18.1
Yes, but not in the last 12 months	40.0	34.3	45.2
No, never	44.8	53.6	36.7
Weighted N =	*3,239*	*1,547*	*1,692*
Received HIV Test Results[b] *Did you receive the results of your most recent HIV/AIDS test? (We don't want to know your test results.)*			
Yes	93.7	90.3	96.0
No	6.3	9.7	4.0
Weighted N =	*1,760*	*707*	*1,053*

Source. The Monitoring the Future study, the University of Michigan.

[a]In 2008, the HIV questions were added to one half of the questionnaires administered to the 35-year-old respondents. In 2009 and after, these questions were included in all questionnaires for this group.

[b]Those respondents who report never having been tested for HIV are excluded from these percentages.

TABLE 7c
Test for HIV, Lifetime and Last 12 Months
Total and by Gender
among Respondents of Modal Age 40 in 2010–2011[a] Combined

(Entries are percentages.)

Test for	Total	Male	Female
Have you ever been tested for HIV/AIDS? (Do not include tests that you may have had when donating blood or blood plasma.)			
Yes, in the last 12 months	11.8	12.6	11.1
Yes, but not in the last 12 months	43.4	37.8	48.6
No, never	44.8	49.6	40.3
Weighted N =	*1,808*	*868*	*940*
Received HIV Test Results[b]			
Did you receive the results of your most recent HIV/AIDS test? (We don't want to know your test results.)			
Yes	93.5	91.7	94.9
No	6.5	8.3	5.1
Weighted N =	*973*	*429*	*544*

Source. The Monitoring the Future study, the University of Michigan.

[a]The HIV questions were added to the questionnaires for 40-year-olds beginning in 2010.

[b]Those respondents who report never having been tested for HIV are excluded from these percentages.

TABLE 7d

Percentage of Respondents Who Have Had an HIV Test in Their Lifetime[a] by 2-Year Age Groups

(Entries are percentages.)

	Year of Administration								
	2004	2005	2006	2007	2008	2009	2010	2011	2004–2011
Age 21–22	33.2	29.7	29.5	32.9	28.8	31.2	26.4	27.5	29.8
Weighted N =	*404*	*360*	*357*	*493*	*531*	*565*	*548*	*506*	*3,764*
Age 23–24	37.8	38.0	39.3	39.9	39.1	41.2	41.9	41.4	40.0
Weighted N =	*392*	*373*	*354*	*475*	*490*	*477*	*473*	*495*	*3,528*
Age 25–26	45.0	46.6	43.0	45.6	43.8	48.0	46.5	46.3	45.7
Weighted N =	*378*	*349*	*320*	*468*	*468*	*441*	*478*	*420*	*3,322*
Age 27–28	54.5	50.5	52.6	48.2	53.7	51.3	50.2	45.6	50.7
Weighted N =	*343*	*366*	*344*	*468*	*467*	*436*	*449*	*414*	*3,286*
Age 29–30	56.8	54.2	54.3	52.5	54.3	52.1	53.3	52.6	53.6
Weighted N =	*369*	*330*	*305*	*514*	*509*	*470*	*453*	*422*	*3,373*

Source. The Monitoring the Future study, the University of Michigan.

[a]In 2004–2006, the HIV questions were included in two questionnaire forms. In 2007, these questions were added to a third questionnaire form.

Chapter 7

INTERSECTION OF PROTECTIVE BEHAVIORS

To the extent that people who use one type of protection against HIV transmission are more likely to use another, we may have an indication of individual differences in protection against HIV/AIDS in general. We look here at the degree of association between getting tested and using condoms.

Frequency of Condom Use by Getting Tested for HIV

- Are people who take the precaution of using condoms also the ones who are getting tested for HIV? The answer appears to be somewhat complicated (Table 8a), with the association being slightly curvilinear among both male and female young adults. Of those who say they "always" use condoms, 19% indicate getting tested for HIV in the prior 12 months, compared to the 26%–29% who say they seldom, sometimes, or most times use condoms. Perhaps those who always use condoms consider themselves to be at less risk of contracting HIV. Those sexually active respondents who say they never use condoms are also slightly less likely to have been tested in the prior 12 months (21%) than the middle groups. Overall, there is rather little association between these two protective behaviors.

- Among the 35- and 40-year-olds the same curvilinear relationship between HIV testing and condom use appears to hold (Tables 8b and 8c). While the differences in testing as a function of how often sexually active respondents use condoms are not large, there are some fairly consistent differences. For example, among 35-year-olds, those not using condoms at all in the past 12 months, 14% were tested in the past 12 months. That proportion rises to 17% among those who seldomly use condoms and to 25% among those who sometimes use condoms; it then declines to 21% among those who use condoms most times, and falls to 17% among those who always use condoms.

  There appears to be little association between condom use and the proportion of those getting tested for HIV who actually secure the results of their tests. As Tables 8a, 8b, and 8c illustrate, nearly all respondents (92%–94%) secure their test results, regardless of how often they have used condoms in the prior year.

TABLE 8a
Test for HIV, Lifetime and Last 12 Months by Frequency of Condom Use among Respondents of Modal Ages 21–30 in 2004–2011[a] Combined

(Entries are percentages.)

		Condom Use in Last 12 Months[b]				
Test for HIV: Lifetime and Last 12 Months		Never	Seldom	Sometimes	Most Times	Always
Have you ever been tested for HIV/AIDS? (Do not include tests that you may have had when donating blood or blood plasma.)						
Total						
Yes, in the last 12 months		21.3	26.1	28.5	26.6	18.7
Yes, but not in the last 12 months		29.7	24.5	23.8	23.8	17.9
No, never		49.0	49.4	47.7	49.6	63.5
	Weighted N =	*5,875*	*1,985*	*1,855*	*2,164*	*2,608*
Male						
Yes, in the last 12 months		15.4	18.1	21.6	21.9	16.8
Yes, but not in the last 12 months		25.6	23.4	22.3	22.7	16.0
No, never		59.0	58.5	56.0	55.3	67.2
	Weighted N =	*2,419*	*907*	*882*	*1,123*	*1,396*
Female						
Yes, in the last 12 months		25.4	32.8	34.7	31.6	20.8
Yes, but not in the last 12 months		32.6	25.4	25.1	25.0	20.0
No, never		41.9	41.8	40.2	43.4	59.1
	Weighted N =	*3,456*	*1,078*	*973*	*1,041*	*1,211*
Received HIV Test Results[c]						
Did you receive the results of your most recent HIV/AIDS test? (We don't want to know your test results.)						
Total						
Yes		93.2	91.9	93.8	94.4	93.3
No		6.8	8.1	6.2	5.6	6.7
	Weighted N =	*2,963*	*987*	*964*	*1,079*	*947*
Male						
Yes		91.6	90.0	91.5	92.8	93.1
No		8.4	10.0	8.5	7.2	6.9
	Weighted N =	*984*	*365*	*384*	*494*	*455*
Female						
Yes		94.0	93.1	95.4	95.8	93.5
No		6.0	6.9	4.6	4.2	6.5
	Weighted N =	*1,979*	*621*	*580*	*585*	*493*

Source. The Monitoring the Future study, the University of Michigan.

[a]In 2004–2006, the HIV questions were included in two questionnaire forms. In 2007, these questions were added to a third questionnaire form.

[b]Percentages based on those reporting sex with one or more partners during the last 12 months. Those reporting no partners are omitted.

[c]Those respondents who report never having been tested for HIV are excluded from these percentages.

TABLE 8b

Test for HIV, Lifetime and Last 12 Months by Frequency of Condom Use among Respondents of Modal Age 35 in 2008–2011[a] Combined

(Entries are percentages.)

		Condom Use in Last 12 Months[b]				
Test for HIV: Lifetime and Last 12 Months *Have you ever been tested for HIV/AIDS? (Do not include tests that you may have had when donating blood or blood plasma.)*		Never	Seldom	Sometimes	Most Times	Always
Total						
Yes, in the last 12 months		13.6	16.9	24.7	21.0	16.6
Yes, but not in the last 12 months		42.2	41.0	30.4	44.9	46.6
No, never		44.1	42.1	44.9	34.1	36.7
	Weighted N =	*1,883*	*238*	*259*	*237*	*283*
Males						
Yes, in the last 12 months		10.1	9.3	19.1	20.6	13.7
Yes, but not in the last 12 months		36.1	31.7	27.7	42.6	46.5
No, never		53.8	59.0	53.2	36.8	39.9
	Weighted N =	*852*	*122*	*140*	*134*	*132*
Females						
Yes, in the last 12 months		16.6	25.0	31.4	21.6	19.2
Yes, but not in the last 12 months		47.3	50.8	33.5	47.9	46.7
No, never		36.2	24.2	35.1	30.5	34.0
	Weighted N =	*1,031*	*116*	*118*	*104*	*152*
Received HIV Test Results[c] *Did you receive the results of your most recent HIV/AIDS test? (We don't want to know your test results.)*						
Total						
Yes		94.1	93.7	93.3	93.6	93.9
No		5.9	6.3	6.7	6.4	6.1
	Weighted N =	*1,039*	*136*	*140*	*155*	*178*
Males						
Yes		90.4	88.0	91.7	91.4	93.1
No		9.6	12.0	8.3	8.6	6.9
	Weighted N =	*386*	*52*	*66*	*83*	*79*
Females						
Yes		96.3	97.2	94.8	96.1	94.7
No		3.7	2.8	5.2	3.9	5.3
	Weighted N =	*653*	*85*	*74*	*72*	*98*

Source. The Monitoring the Future study, the University of Michigan.

[a]In 2004–2006, the HIV questions were included in two questionnaire forms. In 2007, these questions were added to a third questionnaire form.

[b]Percentages based on those reporting sex with one or more partners during the last 12 months. Those reporting no partners are omitted.

[c]Those respondents who report never having been tested for HIV are excluded from these percentages.

TABLE 8c
Test for HIV, Lifetime and Last 12 Months by Frequency of Condom Use among Respondents of Modal Age 40 in 2010–2011[a] Combined

(Entries are percentages.)

		Condom Use in Last 12 Months[b]				
Test for HIV: Lifetime and Last 12 Months *Have you ever been tested for HIV/AIDS? (Do not include tests that you may have had when donating blood or blood plasma.)*		Never	Seldom	Sometimes	Most Times	Always
Total						
Yes, in the last 12 months		10.2	20.5	22.9	19.7	13.6
Yes, but not in the last 12 months		45.5	38.4	46.7	39.4	41.6
No, never		44.3	41.0	30.4	40.9	44.8
	Weighted N =	*1,185*	*86*	*90*	*95*	*130*
Males						
Yes, in the last 12 months		11.1	18.8	24.9	21.0	18.2
Yes, but not in the last 12 months		40.3	37.8	32.2	31.6	31.2
No, never		48.6	43.4	42.9	47.4	50.7
	Weighted N =	*561*	*45*	*49*	*51*	*71*
Females						
Yes, in the last 12 months		9.4	22.5	20.6	18.3	8.0
Yes, but not in the last 12 months		50.1	39.1	63.7	48.2	54.4
No, never		40.5	38.4	15.7	33.5	37.6
	Weighted N =	*624*	*40*	*41*	*44*	*58*
Received HIV Test Results[c] *Did you receive the results of your most recent HIV/AIDS test? (We don't want to know your test results.)*						
Total						
Yes		92.6	92.4	96.2	98.0	96.4
No		7.4	7.6	3.8	2.0	3.6
	Weighted N =	*641*	*50*	*62*	*55*	*70*
Males						
Yes		89.9	96.3	92.3	95.8	100.0
No		10.1	3.7	7.7	4.2	*
	Weighted N =	*281*	*26*	*27*	*27*	*35*
Females						
Yes		94.8	88.4	99.2	100.0	92.8
No		5.2	11.6	0.8	*	7.2
	Weighted N =	*360*	*24*	*35*	*28*	*35*

Source. The Monitoring the Future study, the University of Michigan.

Notes. ' * ' indicates a prevalence rate of less than 0.05%.

[a]In 2004–2006, the HIV questions were included in two questionnaire forms. In 2007, these questions were added to a third questionnaire form.

[b]Percentages based on those reporting sex with one or more partners during the last 12 months. Those reporting no partners are omitted.

[c]Those respondents who report never having been tested for HIV are excluded from these percentages.

Chapter 8

INTERSECTION OF RISK AND PROTECTIVE BEHAVIORS

It is useful to know whether people who are at higher risk of contracting or transmitting HIV are more likely to undertake protective behaviors than those at lower risk. In this chapter we examine the frequency of condom use as a function of the number of partners the respondent reported having in the prior 12 months, the gender of those partners, and the history of sharing needles. We also look at the prevalence of getting tested as a function of the number of partners reported, the gender of those partners, and the history of needle sharing.

Frequency of Condom Use by Number of Partners

- Among young adults, both the prevalence and frequency of condom use rise with the number of sexual partners the respondent had in the prior 12 months; this holds true for both genders (Table 9a).

- Only about one third (33%) of sexually active young adults said that they used a condom "most times" or "always"—38% of males and 29% of females (Table 6a). This statistic rises considerably with the number of partners reported (Table 9a).

- As might be expected, many of the young adults not using condoms are respondents who had only one partner during the year (Table 9a). Among those reporting only one partner (the majority of all respondents), 51% said they did *not* use condoms at all in the last 12 months. That statistic fell by more than half among those reporting two partners (to 20%); it fell further among those reporting three or four partners (to 13%), and still further among those reporting five or more partners (11%).

- In sum, using condoms, which prevent exposure to and transmission of HIV (and many other sexually transmitted diseases), is considerably more prevalent among young adults who are at heightened risk due to the number of sexual partners they have. That is the encouraging part of this finding. However, only 55% of those reporting 5 or more sexual partners in the last 12 months also report using condoms "most times" or "always," leaving a considerable portion of this population at risk.

- Among 35- and 40-year-olds there is a similar increase in the prevalence and frequency of condom use as a function of the number of sexual partners reported (Tables 9b and 9c). These results are only suggestive at this point.

- The prevalence of condom use declines sharply with increasing age, very likely a result of more being married or in another committed relationship at these later ages. Among 35- and 40-year-olds, the case counts become quite low for people reporting a relatively high number of partners.

Frequency of Condom Use by Gender of Partners

- Considerable efforts have been made in past years to encourage the use of condoms by men who have sex with men (MSM), with the obvious intent to stem the spread of HIV/AIDS in this high-risk population. While the numbers of such cases available for analysis so far are quite limited (weighted N = 350 among the young adults), results suggest that the use of condoms in this population (41% reporting "most times" or "always") is only a little higher than in the population of men reporting sex exclusively with women (37% reporting "most times" or "always") in the prior year. Similar proportions of both groups (38% and 36%, respectively) report never using condoms (Table 10a). The rate of condom use among men having sexual relations only with women is likely suppressed somewhat by the proportion seeking to conceive a child.

- Among 35- and 40-year-olds, similar rates of condom use among MSM and men who have sex only with women hold, although the case counts for men who have sex with men exclusively are still quite low (Table 10b and 10c).

- As would be expected, the great majority of young adult women who had sex exclusively with women in the prior year report not using condoms during the prior year (81%) vs. 44% of those having sex exclusively with men. (Condoms are seldom used with oral sex.) Among women reporting having sex with both genders during the year, only 27% report no use of condoms.

- The case counts are still too small for 35- and 40-year-olds to make these comparisons (Tables 10b and 10c).

Frequency of Condom Use by Needle Sharing

- The association between needle sharing and condom use is not very clear; there is a suggestion that those who reported some sharing in their lifetime may be less likely to have used condoms most times or always when they had sexual intercourse in the past 12 months. Given that condom use behavior is dependent on a variety of factors such as gender, gender of partners, number of partners, marital status, etc., it is difficult to draw clear inferences from the association with needle sharing, particularly given the small numbers of cases (Table 11a).

- There are too few cases for needle-sharing among 35- and 40-year-olds to report on differences in condom use.

Getting Tested for HIV by Number of Partners

- Among the young adults, the prevalence of getting tested for HIV rises with the number of partners reported in the prior 12 months (Table 12a). While only 6.3% of those reporting no partners in the prior 12 months say that they have been tested in the prior 12 months, the rate rises to 19% of those reporting one partner, 30% for those reporting two partners, and up to 38% for those reporting five or more partners.

- The proportion of young adults getting the results of their tests is very high in all groups (Table 12a).

- It thus appears that those young adults at increased risk because of the number of partners with whom they have had sexual encounters are more likely to exhibit the protective behaviors of getting tested and securing the results of the test. However, about two thirds of those reporting multiple partners did not have an HIV test in the prior year (Table 12a).

- Among the 35-year-olds and 40-year-olds, the proportion getting tested also rises with the number of partners in the prior 12 months; the prevalence rates are about the same as among the young adults (Tables 12b and 12c).

Getting Tested for HIV by Gender of Partners

- Because men who have sex with men are at particular risk for contracting and transmitting HIV, we examined if HIV testing was more prevalent among this group (Table 13a). While the number of young adult cases is small (353 weighted cases), the results are suggestive of increased vigilance in this population. Two thirds (67%) of males having exclusively male partners in the prior year indicated being tested for HIV at some time, and nearly four in every ten (40%) said that they had been tested in just the past year. These rates compare to 39% and 17%, respectively, among men who had female partners exclusively during the past year. Hardly any (3%) of the males reporting relations exclusively with other men in the past year said that they failed to get the results of their most recent test, versus 8% of those who had only female partners.
- Similar differences appear among 35-year-old men (Table 13b), though the case counts are very limited and thus the results are only suggestive at this point.

Getting Tested for HIV by Needle Sharing

- Young adults who have shared needles in their lifetime are considerably more likely to report having been tested for HIV both in their lifetime and in the prior year than those who have never shared needles. Those who have shared needles in the past year are also significantly more likely to report getting tested for HIV during the past year than those who did not share needles during the past year (Table 14a).

Thus, one of the highest risk groups for HIV infection—those who have shared needles—are among the most likely to exhibit the protective behavior of getting tested for HIV; they may also be less likely to use condoms. Another very high risk group—men having sex with men—use condoms at about the same rate as men having sex exclusively with women; but they do get tested more frequently. Fortunately, those at higher than average risk due to their number of sex partners, are more likely to use both protective behaviors.

This has been a summary of the *prevalence* of risk and protective behaviors associated with the spread of HIV among young adults in the general population, and of the *intersection* of these various risk and protective behaviors. Starting in the next chapter, we consider the extent to which there has been change in these risk and protective behaviors since 2004.

TABLE 9a

Condom Use by Number of Sex Partners in Last 12 Months among Respondents of Modal Ages 21–30 in 2004–2011[a] Combined

(Entries are percentages.)

Frequency of Condom Use in Last 12 Months[b]		Number of Partners in Last 12 Months				
		None	One	Two	Three or Four	Five or More
When you had sexual intercourse during the LAST 12 MONTHS, how often were condoms used? (This includes vaginal and anal sex, but not oral sex.)						
Total						
Never		—	50.7	19.7	13.4	11.1
Seldom		—	12.9	16.8	16.6	12.8
Sometimes		—	10.4	17.7	18.3	21.0
Most times		—	9.3	21.8	31.5	36.9
Always		—	16.7	24.0	20.2	18.2
	Weighted N =	—	*10,316*	*1,648*	*1,597*	*909*
Male						
Never		—	46.9	17.6	13.1	11.0
Seldom		—	13.2	14.4	16.0	11.0
Sometimes		—	11.0	15.4	17.4	20.1
Most times		—	10.5	22.7	29.8	36.7
Always		—	18.5	29.9	23.8	21.2
	Weighted N =	—	*4,497*	*756*	*852*	*607*
Female						
Never		—	53.7	21.5	13.7	11.4
Seldom		—	12.6	18.9	17.3	16.3
Sometimes		—	10.0	19.5	19.4	22.9
Most times		—	8.5	21.0	33.5	37.4
Always		—	15.2	19.0	16.1	12.0
	Weighted N =	—	*5,819*	*892*	*745*	*302*

Source. The Monitoring the Future study, the University of Michigan.

Notes. ' — ' indicates not applicable.

[a]In 2004–2006, the HIV questions were included in two questionnaire forms. In 2007, these questions were added to a third questionnaire form.

[b]Percentages based on those reporting sex with one or more partners during the last 12 months. Those reporting no partners are omitted.

TABLE 9b

Condom Use by Number of Sex Partners in Last 12 Months among Respondents of Modal Age 35 in 2008–2011[a] Combined

(Entries are percentages.)

		Number of Partners in Last 12 Months				
Frequency of Condom Use in Last 12 Months[b] *When you had sexual intercourse during the LAST 12 MONTHS, how often were condoms used? (This includes vaginal and anal sex, but not oral sex.)*		None	One	Two	Three or Four	Five or More
Total						
Never		—	71.1	33.4	23.3	11.2
Seldom		—	7.5	11.1	10.2	19.3
Sometimes		—	7.4	17.0	19.0	21.7
Most times		—	5.6	18.9	25.2	36.9
Always		—	8.4	19.6	22.3	10.9
	Weighted N =	—	*2,519*	*149*	*165*	*73*
Males						
Never		—	69.2	40.0	16.9	7.2
Seldom		—	8.1	7.8	10.6	21.5
Sometimes		—	8.2	20.6	20.9	20.2
Most times		—	6.4	13.2	29.3	38.7
Always		—	8.0	18.5	22.4	12.4
	Weighted N =	—	*1,164*	*67*	*96*	*52*
Females						
Never		—	72.7	27.9	32.2	21.1
Seldom		—	7.0	13.8	9.8	13.7
Sometimes		—	6.7	14.1	16.4	25.6
Most times		—	4.8	23.7	19.4	32.4
Always		—	8.8	20.5	22.2	7.1
	Weighted N =	—	*1,354*	*82*	*69*	*21*

Source. The Monitoring the Future study, the University of Michigan.

Notes. ' — ' indicates not applicable.

[a]In 2008, the HIV questions were added to one half of the questionnaires administered to the 35-year-old respondents. In 2009 and after, these questions were included in all questionnaires for this group.

[b]Percentages based on those reporting sex with one or more partners during the last 12 months. Those reporting no partners are omitted.

TABLE 9c

Condom Use by Number of Sex Partners in Last 12 Months among Respondents of Modal Age 40 in 2010–2011[a] Combined

(Entries are percentages.)

Frequency of Condom Use in Last 12 Months[b] *When you had sexual intercourse during the LAST 12 MONTHS, how often were condoms used? (This includes vaginal and anal sex, but not oral sex.)*	Number of Partners in Last 12 Months				
	None	One	Two	Three or Four	Five or More
Total					
Never	—	78.9	45.3	41.6	32.1
Seldom	—	4.5	14.4	9.9	12.9
Sometimes	—	4.6	13.2	21.8	9.6
Most times	—	4.4	11.7	15.5	35.1
Always	—	7.6	15.4	11.2	10.3
Weighted N =	—	*1,415*	*81*	*56*	*37*
Males					
Never	—	77.2	35.9	45.8	26.9
Seldom	—	4.5	25.1	7.2	12.7
Sometimes	—	5.5	11.7	16.8	10.3
Most times	—	4.6	11.1	13.0	36.0
Always	—	8.2	16.2	17.1	14.0
Weighted N =	—	*687*	*36*	*30*	*27*
Females					
Never	—	80.6	52.9	36.8	46.3
Seldom	—	4.5	5.8	12.9	13.4
Sometimes	—	3.7	14.4	27.5	7.8
Most times	—	4.2	12.1	18.4	32.6
Always	—	6.9	14.8	4.4	*
Weighted N =	—	*729*	*45*	*26*	*10*

Source. The Monitoring the Future study, the University of Michigan.

Notes. ' — ' indicates not applicable. ' * ' indicates a prevalence rate of less than 0.05%.

[a]The HIV questions were added to the questionnaires for 40-year-olds beginning in 2010.

[b]Percentages based on those reporting sex with one or more partners during the last 12 months. Those reporting no partners are omitted.

TABLE 10a

Condom Use by Gender of Sex Partners in Last 12 Months among Respondents of Modal Ages 21–30 in 2004–2011[a] Combined

(Entries are percentages.)

	MALE RESPONDENTS			FEMALE RESPONDENTS		
	Gender of Partner(s)			Gender of Partner(s)		
	Female Only	Male Only	Male and Female	Male Only	Female Only	Male and Female
Frequency of Condom Use in Last 12 Months[b]						
When you had sexual intercourse during the LAST 12 MONTHS, how often were condoms used? (This includes vaginal and anal sex, but not oral sex.)						
Never	36.1	38.2	19.8	44.1	80.9	26.7
Seldom	13.6	8.9	15.8	14.1	4.7	11.0
Sometimes	13.1	11.9	13.6	12.6	4.8	16.8
Most times	16.3	20.6	33.8	13.4	4.1	26.4
Always	20.9	20.5	17.0	15.7	5.5	19.2
Weighted N =	*6,374*	*289*	*61*	*7,462*	*153*	*146*

Source. The Monitoring the Future study, the University of Michigan.

[a]In 2004–2006, the HIV questions were included in two questionnaire forms. In 2007, these questions were added to a third questionnaire form.

[b]Percentages based on those reporting sex with one or more partners during the last 12 months. Those reporting no partners are omitted.

TABLE 10b

Condom Use by Gender of Sex Partners in Last 12 Months among Respondents of Modal Age 35 in 2008–2011[a] Combined

(Entries are percentages.)

	MALE RESPONDENTS			FEMALE RESPONDENTS		
	Gender of Partner(s)			Gender of Partner(s)		
	Female Only	Male Only	Male and Female	Male Only	Female Only	Male and Female
Frequency of Condom Use in Last 12 Months[b] *When you had sexual intercourse during the LAST 12 MONTHS, how often were condoms used? (This includes vaginal and anal sex, but not oral sex.)*						
Never	62.5	46.4	†	68.1	†	†
Seldom	8.9	4.4	†	7.7	†	†
Sometimes	10.0	6.5	†	7.7	†	†
Most times	9.2	22.1	†	6.8	†	†
Always	9.3	20.6	†	9.7	†	†
Weighted N =	*1,316*	*47*	*13*	*1,487*	*24*	*13*

Source. The Monitoring the Future study, the University of Michigan.

Notes. ' † ' indicates that the sample size is too limited to provide reliable estimates.

[a]In 2008, the HIV questions were added to one half of the questionnaires administered to the 35-year-old respondents. In 2009 and after, these questions were included in all questionnaires for this group.

[b]Percentages based on those reporting sex with one or more partners during the last 12 months. Those reporting no partners are omitted.

TABLE 10c

Condom Use by Gender of Sex Partners in Last 12 Months among Respondents of Modal Age 40 in 2010–2011[a] Combined

(Entries are percentages.)

	MALE RESPONDENTS			FEMALE RESPONDENTS		
	Gender of Partner(s)			Gender of Partner(s)		
	Female Only	Male Only	Male and Female	Male Only	Female Only	Male and Female
Frequency of Condom Use in Last 12 Months[b] *When you had sexual intercourse during the LAST 12 MONTHS, how often were condoms used? (This includes vaginal and anal sex, but not oral sex.)*						
Never	72.9	56.7	†	77.4	†	†
Seldom	5.4	11.8	†	5.1	†	†
Sometimes	6.5	4.6	†	5.2	†	†
Most times	6.3	12.6	†	5.1	†	†
Always	8.9	14.4	†	7.3	†	†
Weighted N =	*745*	*36*	*1*	*790*	*9*	*10*

Source. The Monitoring the Future study, the University of Michigan.

Notes '†' indicates that the sample size is too limited to provide reliable estimates.

[a]The HIV questions were added to the questionnaires for 40-year-olds beginning in 2010.

[b]Percentages based on those reporting sex with one or more partners during the last 12 months. Those reporting no partners are omitted.

Table 11a
Condom Use by Needle Sharing
among Respondents of Modal Ages 21–30 in 2004–2011[a] Combined

(Entries are percentages.)

Frequency of Condom Use in Last 12 Months[b]	Needle Sharing: Yes, in Last 12 Months	Needle Sharing: Yes, but not in Last 12 Months	Needle Sharing: No, Never
When you had sexual intercourse during the LAST 12 MONTHS, how often were condoms used? (This includes vaginal and anal sex, but not oral sex.)			
	33.3	46.5	40.6
Never	35.4	28.0	13.6
Seldom	8.5	9.5	12.8
Sometimes	21.0	10.4	15.0
Most	1.8	5.6	18.0
Weighted N =	*21*	*47*	*14,285*

Source. The Monitoring the Future study, the University of Michigan.

[a]In 2004–2006, the HIV questions were included in two questionnaire forms. In 2007, these questions were added to a third questionnaire form.

[b]Those respondents who report never having sex in the last 12 months are excluded from these percentages.

TABLE 12a

Test for HIV, Lifetime and Last 12 Months by Number of Sex Partners in Last 12 Months among Respondents of Modal Ages 21–30 in 2004–2011[a] Combined

(Entries are percentages.)

	Number of Partners in Last 12 Months				
Test for HIV: Lifetime and Last 12 Months	None	One	Two	Three or Four	Five or More
Have you ever been tested for HIV/AIDS? (Do not include tests that you may have had when donating blood or blood plasma.)					
Yes, in the last 12 months	6.3	19.4	29.8	31.8	37.9
Yes, but not in the last 12 months	10.5	26.8	21.3	21.4	19.9
No, never	83.3	53.8	48.9	46.8	42.2
Weighted N =	*2,480*	*10,445*	*1,659*	*1,605*	*911*
Received HIV Test Results[b]					
Did you receive the results of your most recent HIV/AIDS test? (We don't want to know your test results.)					
Yes	89.7	93.3	91.3	93.0	96.1
No	10.3	6.7	8.7	7.0	3.9
Weighted N =	*402*	*4,778*	*836*	*849*	*515*

Source. The Monitoring the Future study, the University of Michigan.

[a]In 2004–2006, the HIV questions were included in two questionnaire forms. In 2007, these questions were added to a third questionnaire form.

[b]Those respondents who report never having been tested for HIV are excluded from these percentages.

TABLE 12b

Test for HIV, Lifetime and Last 12 Months by Number of Sex Partners in Last 12 Months among Respondents of Modal Age 35 in 2008–2011[a] Combined

(Entries are percentages.)

	Number of Partners in Last 12 Months				
Test for HIV: Lifetime and Last 12 Months	None	One	Two	Three or Four	Five or More
Have you ever been tested for HIV/AIDS? (Do not include tests that you may have had when donating blood or blood plasma.)					
Yes, in the last 12 months	9.0	13.7	21.5	33.8	38.0
Yes, but not in the last 12 months	23.1	41.9	42.2	37.6	41.8
No, never	67.9	44.4	36.3	28.6	20.2
Weighted N =	*293*	*2,538*	*151*	*165*	*72*
Received HIV Test Results[b]					
Did you receive the results of your most recent HIV/AIDS test? (We don't want to know your test results.)					
Yes	91.5	94.1	91.4	96.1	91.5
No	8.5	5.9	8.6	3.9	8.5
Weighted N =	*89*	*1,389*	*96*	*117*	*57*

Source. The Monitoring the Future study, the University of Michigan.

[a]In 2008, the HIV questions were added to one half of the questionnaires administered to the 35-year-old respondents. In 2009 and after, these questions were included in all questionnaires for this group.

[b]Those respondents who report never having been tested for HIV are excluded from these percentages.

TABLE 12c

Test for HIV, Lifetime and Last 12 Months by Number of Sex Partners in Last 12 Months among Respondents of Modal Age 40 in 2010–2011[a] Combined

(Entries are percentages.)

	Number of Partners in Last 12 Months				
Test for HIV: Lifetime and Last 12 Months *Have you ever been tested for HIV/AIDS? (Do not include tests that you may have had when donating blood or blood plasma.)*	None	One	Two	Three or Four	Five or More
Yes, in the last 12 months	6.9	9.7	26.4	43.4	41.9
Yes, but not in the last 12 months	35.4	45.2	40.3	38.2	32.7
No, never	57.7	45.1	33.3	18.3	25.4
Weighted N =	*199*	*1,430*	*79*	*58*	*37*
Received HIV Test Results[b] *Did you receive the results of your most recent HIV/AIDS test? (We don't want to know your test results.)*					
Yes	92.3	93.7	91.7	94.6	92.6
No	7.7	6.3	8.3	5.4	7.4
Weighted N =	*82*	*761*	*54*	*47*	*28*

Source. The Monitoring the Future study, the University of Michigan.

[a]The HIV questions were added to the questionnaires for 40-year-olds beginning in 2010.

[b]Those respondents who report never having been tested for HIV are excluded from these percentages.

TABLE 13a

Test for HIV, Lifetime and Last 12 Months by Gender of Sex Partners in Last 12 Months among Respondents of Modal Ages 21–30 in 2004–2011[a] Combined

(Entries are percentages.)

	MALE RESPONDENTS			FEMALE RESPONDENTS		
	Gender of Partner(s)			Gender of Partner(s)		
	Female Only	Male Only	Male and Female	Male Only	Female Only	Male and Female
Test for HIV: Lifetime and Last 12 Months						
Have you ever been tested for HIV/AIDS? (Do not include tests that you may have had when donating blood or blood plasma.)						
Yes, in the last 12 months	16.8	39.9	29.9	27.4	23.5	40.5
Yes, but not in the last 12 months	22.0	27.5	19.9	27.6	24.9	28.3
No, never	61.2	32.6	50.2	45.0	51.6	31.2
Weighted N =	*6,417*	*290*	*61*	*7,524*	*167*	*147*
Received HIV Test Results[b]						
Did you receive the results of your most recent HIV/AIDS test? (We don't want to know your test results.)						
Yes	91.6	97.4	78.7	94.2	89.8	95.0
No	8.4	2.6	21.3	5.8	10.2	5.0
Weighted N =	*2,463*	*193*	*29*	*4,099*	*81*	*97*

Source. The Monitoring the Future study, the University of Michigan.

[a]In 2004–2006, the HIV questions were included in two questionnaire forms. In 2007, these questions were added to a third questionnaire form.

[b]Those respondents who report never having been tested for HIV are excluded from these percentages.

TABLE 13b

Test for HIV, Lifetime and Last 12 Months by Gender of Sex Partners in Last 12 Months among Respondents of Modal Age 35 in 2008–2011[a] Combined

(Entries are percentages.)

	MALE RESPONDENTS			FEMALE RESPONDENTS		
	Gender of Partner(s)			Gender of Partner(s)		
	Female Only	Male Only	Male and Female	Male Only	Female Only	Male and Female
Test for HIV: Lifetime and Last 12 Months						
Have you ever been tested for HIV/AIDS? (Do not include tests that you may have had when donating blood or blood plasma.)						
Yes, in the last 12 months	11.2	32.0	†	18.6	41.2	†
Yes, but not in the last 12 months	36.1	51.6	†	46.5	36.4	†
No, never	52.7	16.4	†	34.9	22.4	†
Weighted N =	*1,318*	*50*	*13*	*1,484*	*26*	*13*
Received HIV Test Results[b]						
Did you receive the results of your most recent HIV/AIDS test? (We don't want to know your test results.)						
Yes	90.6	95.1	†	95.9	100.0	†
No	9.4	4.9	†	4.1	*	†
Weighted N =	*615*	*42*	*10*	*953*	*21*	*11*

Source. The Monitoring the Future study, the University of Michigan.

Notes. ' † ' indicates that the sample size is too limited to provide reliable estimates. ' * ' indicates a prevalence rate of less than 0.05%.

[a]In 2008, the HIV questions were added to one half of the questionnaires administered to the 35-year-old respondents. In 2009 and after, these questions were included in all questionnaires for this group.

[b]Those respondents who report never having been tested for HIV are excluded from these percentages.

TABLE 13c

Test for HIV, Lifetime and Last 12 Months by Gender of Sex Partners in Last 12 Months among Respondents of Modal Age 40 in 2010–2011[a] Combined

(Entries are percentages.)

	MALE RESPONDENTS			FEMALE RESPONDENTS		
	Gender of Partner(s)			Gender of Partner(s)		
	Female Only	Male Only	Male and Female	Male Only	Female Only	Male and Female
Test for HIV: Lifetime and Last 12 Months						
Have you ever been tested for HIV/AIDS? (Do not include tests that you may have had when donating blood or blood plasma.)						
Yes, in the last 12 months	12.1	45.6	†	10.9	†	†
Yes, but not in the last 12 months	38.5	35.4	†	50.6	†	†
No, never	49.4	19.0	†	38.4	†	†
Weighted N =	*741*	*37*	*1*	*794*	*10*	*10*
Received HIV Test Results[b]						
Did you receive the results of your most recent HIV/AIDS test? (We don't want to know your test results.)						
Yes	91.6	94.7	†	94.9	†	†
No	8.4	5.3	†	5.1	†	†
Weighted N =	*367*	*30*	*0*	*475*	*5*	*5*

Source. The Monitoring the Future study, the University of Michigan.

Notes. ' † ' indicates that the sample size is too limited to provide reliable estimates.

[a]The HIV questions were added to the questionnaires for 40-year-olds beginning in 2010.

[b]Those respondents who report never having been tested for HIV are excluded from these percentages.

Table 14a
Testing for HIV by Needle Sharing
among Respondents of Modal Ages 21–30 in 2004–2011[a] Combined

(Entries are percentages.)

	Needle Sharing		
Test for HIV: Lifetime and Last 12 Months			
Have you ever been tested for HIV/AIDS? (Do not include tests that you may have had when donating blood or blood plasma.)	Yes, in the last 12 months	Yes, but not in the last 12 months	No, never
Yes, in the last 12 months	43.8	43.3	20.5
Yes, but not in the last 12 months	11.4	35.9	23.0
No, never	44.8	20.8	56.5
Weighted N =	*24*	*55*	*16,894*

Source. The Monitoring the Future study, the University of Michigan.

[a]In 2004–2006, the HIV questions were included in two questionnaire forms. In 2007, these questions were added to a third questionnaire form.

Chapter 9

TRENDS IN THE PREVALENCE AND FREQUENCY OF RISK BEHAVIORS

We believe there is considerable value in tracking *change* in the prevalence of the various risk and protective behaviors related to the spread of HIV. While the numbers of cases available are still limited, especially for estimating the intersection of some of the rarer behaviors like needle sharing and men having sex with men, ongoing data collections should allow us to provide more in-depth consideration of important subgroups and correlates, and most importantly, to monitor the behaviors over time. Adding the relevant questions to additional questionnaire forms in the surveys of young adults has facilitated those efforts; however, only a single questionnaire form is used for respondents over age 30, so the maximum possible numbers of respondents for these ages are already included.

The 2011 MTF data collection is the eighth to include the set of questions on HIV risk and protective behaviors among young adults ages 21 to 30. We present the trend data in this chapter and the next using two-year moving averages in order to smooth the trend estimates and reduce fluctuations due primarily to sampling error. This is done by taking an arithmetic average of (a) the results for the year labeled at the top of each column in Tables 15 and 16, and (b) the results from the prior year.[5]

In Tables 15a, 16a, and in the top panels of Figures 1 through 5, very little change can be seen among young adults ages 21–30 in ***any of the risk behaviors*** under study from 2005 to 2011. Indeed, the level of replication of the results is very high, which serves as evidence of the reliability of these estimates. These points are elaborated below.

Table 15a and Figures 1–5 show no systematic change over the interval 2005–2011 among 21- to 30-year-olds in the prevalence of frequency of lifetime or past-year ***injection drug use*** and particularly in ***needle sharing***. The prevalence of both of these behaviors has consistently been very low.

Among 35-year-olds the trend lines are less smooth, most likely because they are based on considerably fewer cases than the estimates for young adults (Table 15b and the lower panels in Figures 1–3).[6] Nonetheless, some evidence suggests changes in some of the rates. Females appear to show a rising trend in lifetime prevalence of injection drug use, and males appear to

[5]The annual sample size increased in 2007 due to the inclusion of this set of questions in an additional questionnaire form; but the 2006 and 2007 data are weighted equally in calculating the two-year moving average for 2007.

[6]The numbers of cases that underlie the annual estimates for both age groups may be found in the trend tables—for example, in Tables 15a and 15b. They show that the estimates for young adults are based on between 3,400 and 4,900 cases each year, whereas the estimates for 35-year-olds are based on between 1,400 and 1,900 cases.

show a rising trend in annual prevalence of injection drug use and in needle sharing. These behaviors remain at quite low rates, however. Lifetime injection drug use is up among females from 0.4% in 2009 to 1.1% in 2011, whereas annual injection drug use is up among males from 0.3% in 2009 to 0.9% in 2011, as is lifetime prevalence of needle sharing among males (from 0.1% in 2009 to 0.7% in 2011). We will feel more confident that these are real trends after we have additional years of data.

In Table 16a and Figure 4 young adults show no systematic change over the same interval (2005–2011) in the ***prevalence of having more than one sex partner*** in the prior year.

Among 35-year-olds (Table 16b and Figure 4, lower panel) there is also little evidence of systematic change. Each year, over 75% of 35-year-olds of both genders report having only one partner in the year—a higher proportion than among young adults. And in the three years shown, only 12% indicated that they had multiple partners, compared with about 24% among the young adults. Thus, this risk factor clearly declines with age.

The proportions of young adult respondents reporting sex with ***partners of the same gender*** during the prior year also showed no systematic change (Table 16a and Figure 5). Each year between 3.9% to 4.6% of the men indicated having sex exclusively with other men. (Among women, between 1.8% to 2.4% indicated having sex exclusively with other women; this is not generally viewed as a risk behavior for HIV transmission.)

Among 35-year-olds, compared to young adults, the rates of exclusively same-gender sex are lower for males (between 0.5% and 1.3%) but about the same for females (between 1.3% and 2.3%). Figure 5 suggests that there may be some increase in this behavior among males and some decrease among females over the two year interval studied, but the case counts are very low and further confirmation of these apparent trends over additional years is needed.

To summarize, in the young adult population (ages 21–30) there is considerable stability in the major risk behaviors under study here—drug injecting, sharing needles, having multiple sex partners, and men having sex with men. Among the 35-year-olds there is less stability, but the considerable lower numbers of cases per year for this age group make the estimates less stable.

TABLE 15a

Trends[a] in Injection Drug Use and Needle Sharing

Total and by Gender among Respondents of Modal Ages 21–30

(Entries are percentages.)

	Total								Male								Female							
Lifetime Frequency of Injecting	2004	2005	2006	2007	2008	2009	2010	2011	2004	2005	2006	2007	2008	2009	2010	2011	2004	2005	2006	2007	2008	2009	2010	2011
On how many occasions (if any) have you taken any drugs by injection with a needle (like heroin, cocaine, amphetamines, or steroids) in your lifetime? Do not include anything you took under a doctor's orders.																								
0 Occasions	—	98.5	98.5	98.3	98.2	98.4	98.5	98.4	—	97.9	97.7	97.4	97.3	97.5	97.9	97.6	—	99.1	99.2	99.0	99.1	99.1	99.0	99.0
1–2	—	0.5	0.5	0.6	0.5	0.5	0.5	0.4	—	0.6	0.6	0.7	0.7	0.8	0.5	0.4	—	0.3	0.5	0.5	0.3	0.3	0.4	0.4
3–5	—	0.2	0.2	0.3	0.3	0.2	0.2	0.2	—	0.2	0.3	0.5	0.5	0.4	0.3	0.3	—	0.2	0.1	0.1	0.1	0.1	0.1	0.1
6–9	—	0.1	0.2	0.2	0.2	0.1	0.2	0.2	—	0.1	0.3	0.4	0.3	0.2	0.3	0.4	—	*	*	*	*	*	0.1	0.1
10–19	—	0.3	0.2	0.2	0.2	0.2	0.1	0.1	—	0.5	0.4	0.4	0.4	0.3	0.2	0.2	—	*	*	0.1	0.1	0.1	*	*
20–39	—	0.1	0.1	0.1	0.2	0.2	0.1	0.1	—	0.2	0.2	0.3	0.4	0.3	0.1	0.3	—	*	*	*	0.1	0.1	*	*
40+ Occasions	—	0.4	0.3	0.3	0.4	0.5	0.5	0.6	—	0.5	0.5	0.4	0.4	0.6	0.6	0.8	—	0.3	0.2	0.2	0.4	0.4	0.4	0.4
Weighted N =	—	*3,643*	*3,441*	*4,076*	*4,856*	*4,838*	*4,765*	*4,634*	—	*1,727*	*1,615*	*1,904*	*2,282*	*2,296*	*2,255*	*2,160*	—	*1,916*	*1,826*	*2,172*	*2,574*	*2,542*	*2,511*	*2,474*
Annual Frequency of Injecting																								
On how many occasions (if any) have you taken any drugs by injection with a needle (like heroin, cocaine, amphetamines, or steroids) during the last 12 months? Do not include anything you took under a doctor's orders.																								
0 Occasions	—	99.5	99.6	99.6	99.5	99.5	99.5	99.5	—	99.2	99.3	99.2	99.3	99.3	99.3	99.2	—	99.7	99.9	99.8	99.7	99.7	99.7	99.7
1–2	—	0.1	0.1	0.1	0.1	0.1	0.1	0.1	—	0.2	0.2	0.2	0.1	0.1	0.1	0.1	—	0.1	*	0.1	0.1	0.1	0.1	0.1
3–5	—	*	0.1	*	*	0.1	0.1	0.1	—	*	0.1	0.1	*	0.1	0.2	0.2	—	*	*	*	*	*	*	*
6–9	—	*	0.1	0.1	0.2	0.1	*	*	—	*	0.1	0.2	0.3	0.2	*	*	—	*	*	*	*	*	*	*
10–19	—	0.1	0.1	0.1	0.1	*	*	*	—	0.2	0.2	0.1	0.1	*	*	0.1	—	*	*	*	*	*	*	*
20–39	—	*	*	*	0.1	0.1	0.1	0.1	—	0.1	*	*	0.1	0.2	0.2	0.1	—	*	*	*	0.1	0.1	*	*
40+ Occasions	—	0.2	0.1	0.1	0.1	0.2	0.1	0.2	—	0.2	0.1	0.1	0.1	0.2	0.2	0.3	—	0.2	0.1	*	0.1	0.1	0.1	0.1
Weighted N =	—	*3,644*	*3,441*	*4,077*	*4,857*	*4,839*	*4,767*	*4,639*	—	*1,727*	*1,615*	*1,905*	*2,282*	*2,296*	*2,256*	*2,163*	—	*1,917*	*1,826*	*2,172*	*2,575*	*2,543*	*2,511*	*2,476*
Needle Sharing: Lifetime and Last 12 Months																								
Have you ever taken such drugs using a needle that you knew (or suspected) had been used by someone else before you used it?																								
Yes, in the last 12 months	—	0.1	0.1	0.1	0.1	0.2	0.2	0.1	—	0.1	0.2	0.2	0.1	0.3	0.1	0.1	—	0.1	0.1	0.1	0.2	0.2	0.2	0.2
Yes, but not in the last 12 months	—	0.3	0.4	0.4	0.4	0.3	0.3	0.4	—	0.3	0.4	0.3	0.4	0.3	0.3	0.5	—	0.3	0.3	0.4	0.3	0.3	0.2	0.3
No, never	—	99.7	99.5	99.5	99.5	99.5	99.6	99.4	—	99.6	99.4	99.4	99.5	99.5	99.5	99.4	—	99.7	99.6	99.6	99.5	99.6	99.6	99.5
Weighted N =	—	*3,610*	*3,387*	*4,032*	*4,823*	*4,802*	*4,731*	*4,597*	—	*1,708*	*1,582*	*1,888*	*2,271*	*2,275*	*2,238*	*2,141*	—	*1,902*	*1,805*	*2,144*	*2,552*	*2,527*	*2,492*	*2,456*

Source. The Monitoring the Future study, the University of Michigan.

Notes. ' — ' indicates not applicable. ' * ' indicates a prevalence rate of less than 0.05%.

[a]Data presented in this table are two-year moving averages. The 2005 data is 2004 and 2005 combined and so forth. The questions were contained in two questionnaire forms in 2004 through 2006 and three forms beginning in 2007.

TABLE 15b

Trends[a] in Injection Drug Use and Needle Sharing

Total and by Gender among Respondents of Modal Age 35

(Entries are percentages.)

	Total				Male				Female			
Lifetime Frequency of Injecting	2008	2009	2010	2011	2008	2009	2010	2011	2008	2009	2010	2011
On how many occasions (if any) have you taken any drugs by injection with a needle (like heroin, cocaine, amphetamines, or steroids) in your lifetime? Do not include anything you took under a doctor's orders.												
0 Occasions	—	98.7	98.4	98.5	—	97.9	97.6	97.9	—	99.6	99.2	98.9
1–2	—	0.8	0.8	0.5	—	1.4	1.1	0.3	—	0.3	0.6	0.7
3–5	—	0.1	0.1	0.2	—	0.2	0.2	0.3	—	*	*	0.2
6–9	—	*	0.1	0.1	—	0.1	0.2	0.1	—	*	*	*
10–19	—	*	0.1	0.3	—	*	0.1	0.5	—	*	0.1	0.1
20–39	—	0.1	0.1	0.1	—	0.2	0.2	0.1	—	*	*	*
40+ Occasions	—	0.2	0.4	0.4	—	0.3	0.7	0.7	—	0.1	0.1	0.1
Weighted N =	—	*1,453*	*1,908*	*1,796*	—	*711*	*923*	*843*	—	*742*	*985*	*954*
Annual Frequency of Injecting												
On how many occasions (if any) have you taken any drugs by injection with a needle (like heroin, cocaine, amphetamines, or steroids) during the last 12 months? Do not include anything you took under a doctor's orders.												
0 Occasions	—	99.8	99.6	99.6	—	99.7	99.4	99.1	—	99.9	99.8	99.9
1–2	—	0.1	0.1	0.1	—	0.1	0.1	0.1	—	*	*	*
3–5	—	*	*	*	—	*	*	*	—	*	0.1	0.1
6–9	—	*	0.1	0.2	—	*	0.2	0.5	—	*	*	*
10–19	—	*	*	*	—	*	*	*	—	*	*	*
20–39	—	*	0.1	0.1	—	*	0.1	0.1	—	*	*	*
40+ Occasions	—	0.1	0.1	*	—	0.1	0.2	0.1	—	0.1	0.1	*
Weighted N =	—	*1,453*	*1,909*	*1,797*	—	*711*	*923*	*843*	—	*743*	*986*	*954*
Needle Sharing: Lifetime and Last 12 Months												
Have you ever taken such drugs using a needle that you knew (or suspected) had been used by someone else before you used it?												
Yes, in the last 12 months	—	*	0.1	*	—	*	*	*	—	0.1	0.1	0.1
Yes, but not in the last 12 months	—	0.1	0.2	0.4	—	0.1	0.3	0.7	—	*	0.1	0.1
No, never	—	99.9	99.7	99.6	—	99.9	99.7	99.3	—	99.9	99.8	99.8
Weighted N =	—	*1,455*	*1,911*	*1,790*	—	*711*	*924*	*841*	—	*744*	*987*	*949*

Source. The Monitoring the Future study, the University of Michigan.

Notes. ' — ' indicates not applicable. ' * ' indicates a prevalence rate of less than 0.05%.

[a]Data presented in this table are two-year moving averages. The 2009 data is 2008 and 2009 combined and so forth. The questions were contained in three of the six questionnaire forms.

TABLE 16a

Trends[a] in Number of Sex Partners and Gender of Sex Partners

Total and by Gender among Respondents of Modal Ages 21–30

(Entries are percentages.)

	Total								Male								Female							
Number of Partners in Last 12 Months *During the LAST 12 MONTHS, how many sex partners have you had? (This includes vaginal, oral, or anal sex.)*	2004	2005	2006	2007	2008	2009	2010	2011	2004	2005	2006	2007	2008	2009	2010	2011	2004	2005	2006	2007	2008	2009	2010	2011
None	—	14.5	14.6	13.7	13.5	14.1	14.8	16.0	—	16.9	16.6	14.7	14.3	14.6	15.6	17.6	—	12.3	12.8	12.7	12.8	13.6	14.0	14.7
One	—	61.2	61.5	61.9	62.2	61.2	60.6	59.9	—	56.3	56.2	57.0	58.6	57.6	55.8	54.7	—	65.6	66.1	66.2	65.3	64.5	64.9	64.4
Two	—	10.1	9.3	9.5	9.4	9.2	9.9	10.0	—	10.1	8.7	8.9	8.8	9.3	10.3	9.6	—	10.2	9.8	10.1	10.0	9.2	9.5	10.4
Three	—	5.9	6.2	5.8	5.9	5.9	5.9	5.2	—	6.1	7.5	7.2	6.4	6.1	6.4	5.9	—	5.6	5.1	4.5	5.4	5.8	5.5	4.6
Four	—	3.2	3.4	4.0	4.1	4.1	3.3	3.5	—	3.5	4.3	4.8	4.4	4.7	3.8	4.4	—	2.9	2.6	3.3	3.7	3.5	2.9	2.8
5–10	—	3.9	4.1	4.2	4.0	4.3	4.5	4.2	—	5.2	5.3	5.8	5.5	5.8	6.4	6.0	—	2.7	3.0	2.8	2.6	3.0	2.7	2.6
11–20	—	0.9	0.7	0.6	0.7	0.8	0.6	0.7	—	1.5	0.9	0.9	1.3	1.3	0.8	0.9	—	0.4	0.5	0.4	0.2	0.3	0.3	0.5
21–100	—	0.2	0.2	0.2	0.3	0.3	0.3	0.3	—	0.4	0.4	0.5	0.5	0.4	0.5	0.6	—	0.1	*	*	0.1	0.2	0.2	0.1
More than 100	—	0.1	0.2	0.1	0.1	0.2	0.2	0.1	—	0.1	0.2	0.1	0.2	0.4	0.4	0.2	—	0.1	0.1	*	*	*	*	*
Weighted N =	—	*3,628*	*3,432*	*4,066*	*4,844*	*4,829*	*4,758*	*4,630*	—	*1,720*	*1,611*	*1,902*	*2,276*	*2,289*	*2,248*	*2,156*	—	*1,908*	*1,821*	*2,163*	*2,568*	*2,540*	*2,510*	*2,474*
Gender of Partners in Last 12 Months[b] *During the LAST 12 MONTHS, have your sex partner or partners been …*																								
Exclusively male?	—	53.4	54.0	54.0	53.4	52.7	52.9	54.0	—	3.9	4.3	4.6	4.1	4.2	3.9	4.6	—	95.8	96.0	96.3	96.4	96.3	96.0	95.6
Both male and female?	—	1.5	1.4	1.4	1.3	1.4	1.4	1.4	—	1.0	0.8	1.0	0.9	0.9	0.8	0.7	—	1.9	1.9	1.7	1.7	1.9	1.8	2.0
Exclusively female?	—	45.1	44.6	44.6	45.3	45.8	45.7	44.6	—	95.0	94.9	94.4	95.0	94.9	95.3	94.7	—	2.3	2.1	2.0	1.9	1.8	2.2	2.4
Weighted N =	—	*3,103*	*2,935*	*3,504*	*4,180*	*4,142*	*4,051*	*3,886*	—	*1,432*	*1,344*	*1,616*	*1,950*	*1,959*	*1,896*	*1,777*	—	*1,672*	*1,590*	*1,888*	*2,230*	*2,184*	*2,155*	*2,108*

Source. The Monitoring the Future study, the University of Michigan.

Notes. ' — ' indicates not applicable. ' * ' indicates a prevalence rate of less than 0.05%.

[a]Data presented in this table are two-year moving averages. The 2005 data is 2004 and 2005 combined and so forth. The 2007 data is a simple average of 2006 and 2007, because these questions were included in two questionnaire forms in 2006 and three forms beginning in 2007.

[b]Based on those reporting sex with one or more partners during the past year. Those reporting no partners are omitted.

TABLE 16b

Trends[a] in Number of Sex Partners and Gender of Sex Partners

Total and by Gender among Respondents of Modal Age 35

(Entries are percentages.)

Number of Partners in Last 12 Months	Total				Male				Female			
	2008	2009	2010	2011	2008	2009	2010	2011	2008	2009	2010	2011
During the LAST 12 MONTHS, how many sex partners have you had? (This includes vaginal, oral, or anal sex.)												
None	—	9.5	9.7	8.8	—	9.9	9.8	9.6	—	9.1	9.5	8.1
One	—	78.5	78.2	79.1	—	76.4	77.0	76.0	—	80.5	79.4	81.8
Two	—	4.9	5.1	4.4	—	4.9	4.3	4.1	—	4.9	5.8	4.8
Three	—	3.1	3.4	3.5	—	2.9	4.0	4.0	—	3.2	2.8	3.0
Four	—	1.6	1.6	2.0	—	1.9	2.0	3.3	—	1.3	1.3	0.8
5–10	—	1.6	1.3	1.5	—	2.5	1.8	2.0	—	0.8	0.9	1.0
11–20	—	0.5	0.3	0.3	—	1.0	0.6	0.3	—	0.1	0.1	0.2
21–100	—	0.2	0.3	0.3	—	0.3	0.4	0.5	—	*	0.2	0.2
More than 100	—	0.1	0.1	*	—	0.2	0.1	0.1	—	*	*	*
Weighted N =	—	*1,449*	*1,902*	*1,784*	—	*707*	*918*	*837*	—	*742*	*984*	*947*
Gender of Partners in Last 12 Months[b]												
During the LAST 12 MONTHS, have your sex partner or partners been …												
Exclusively male?	—	51.7	52.2	53.8	—	3.5	3.3	3.7	—	97.0	97.6	97.7
Both male and female?	—	0.6	1.0	1.1	—	0.5	1.0	1.3	—	0.6	1.0	1.0
Exclusively female?	—	47.7	46.8	45.1	—	95.9	95.6	95.0	—	2.3	1.5	1.3
Weighted N =	—	*1,307*	*1,701*	*1,611*	—	*634*	*818*	*753*	—	*673*	*882*	*858*

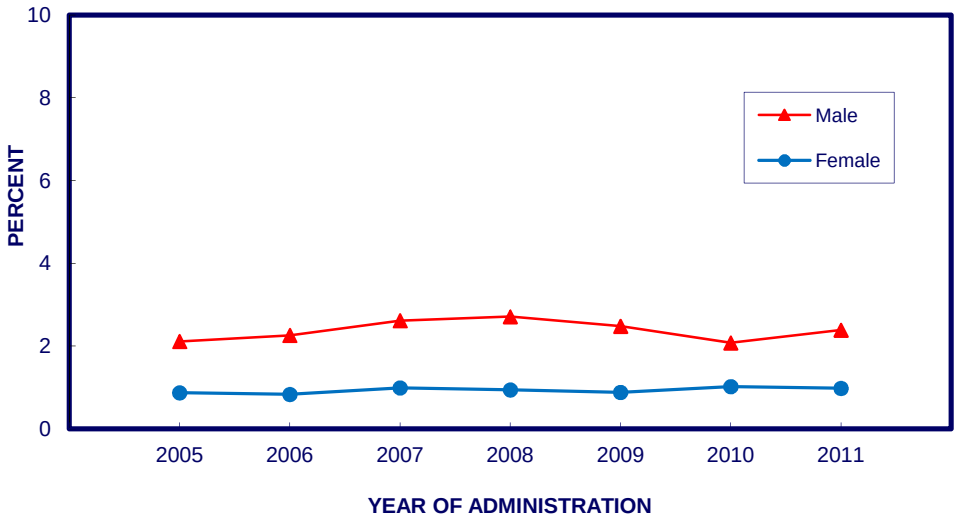
Source. The Monitoring the Future study, the University of Michigan.

Notes. ' — ' indicates not applicable. ' * ' indicates a prevalence rate of less than 0.05%.

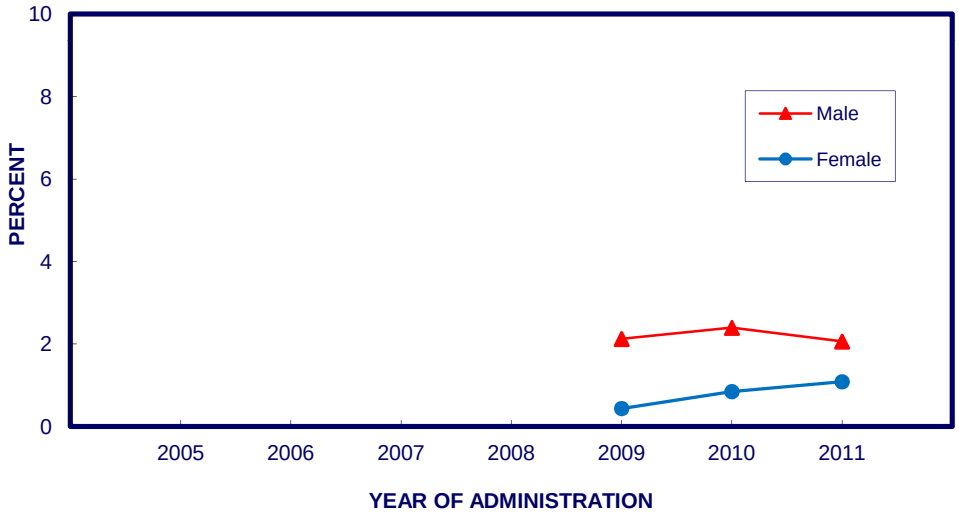
[a]Data presented in this table are two-year moving averages. The 2009 data is 2008 and 2009 combined and so forth. The questions were contained in three of the six questionnaire forms.

[b]Based on those reporting sex with one or more partners during the past year. Those reporting no partners are omitted.

FIGURE 1
Trends (2-year average) in Lifetime Injection Drug Use by Gender among Respondents of Modal Ages 21-30

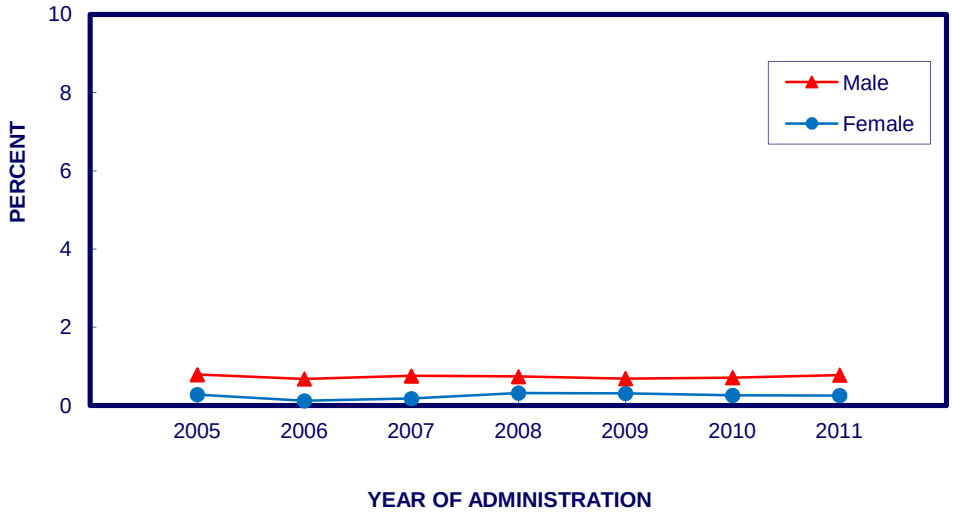


Trends (2-year average) in Lifetime Injection Drug Use by Gender among Respondents of Modal Age 35



Source. The Monitoring the Future study, the University of Michigan.

FIGURE 2
Trends (2-year average) in Annual Injection Drug Use by Gender among Respondents of Modal Ages 21-30



Trends (2-year average) in Annual Injection Drug Use by Gender among Respondents of Modal Age 35

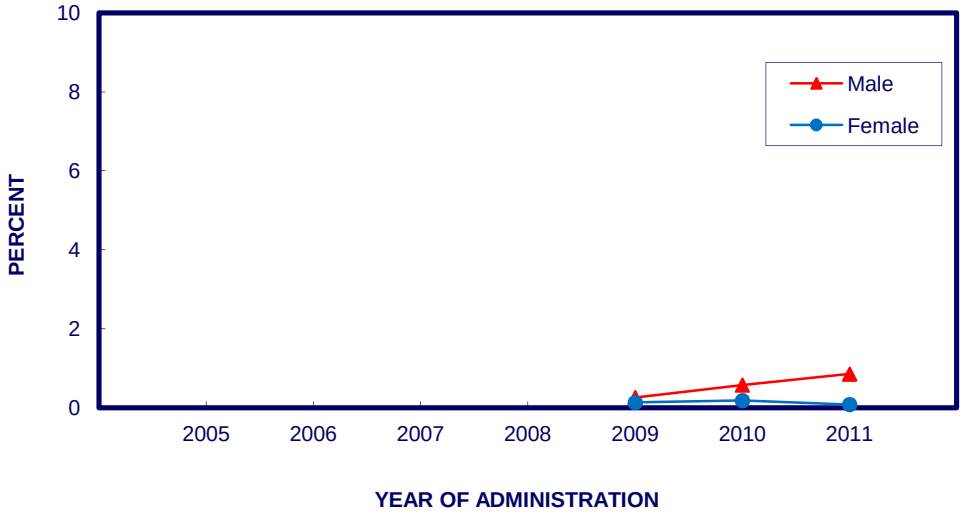
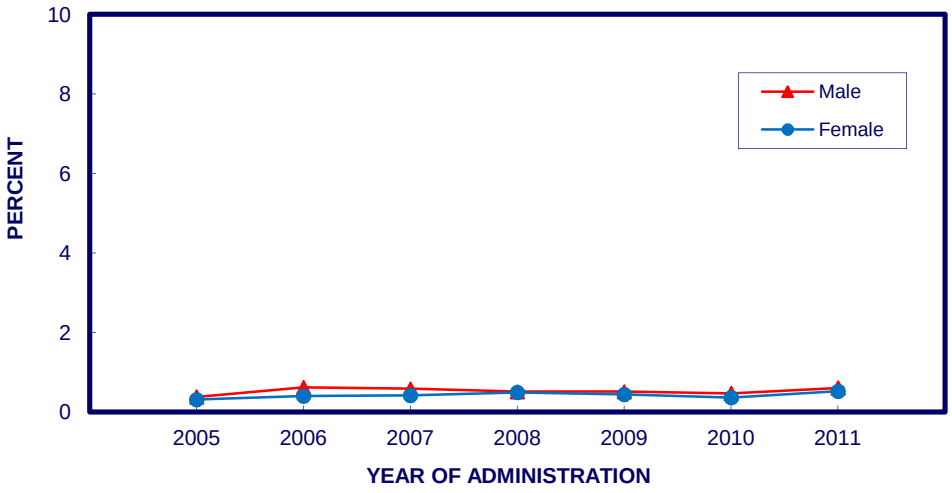
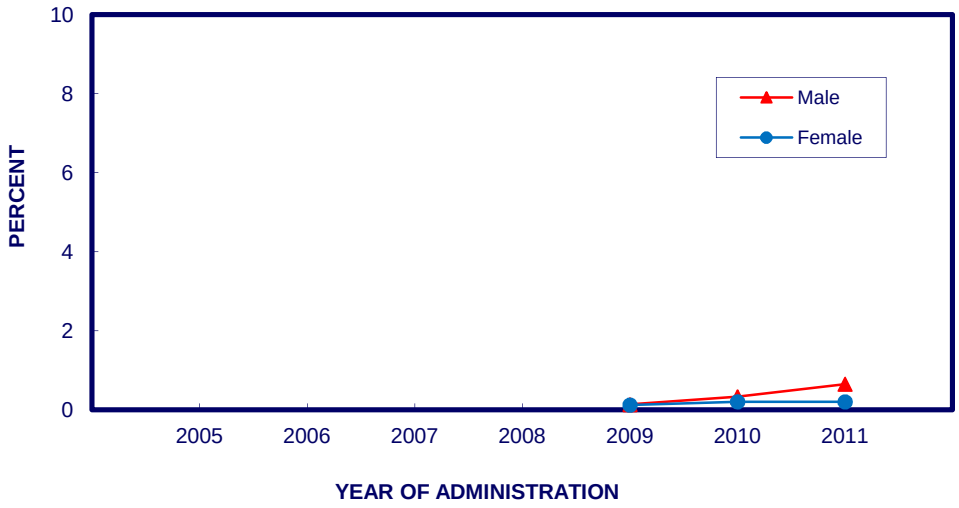


FIGURE 3
Trends (2-year average) in Lifetime Needle Sharing by Gender among Respondents of Modal Ages 21-30

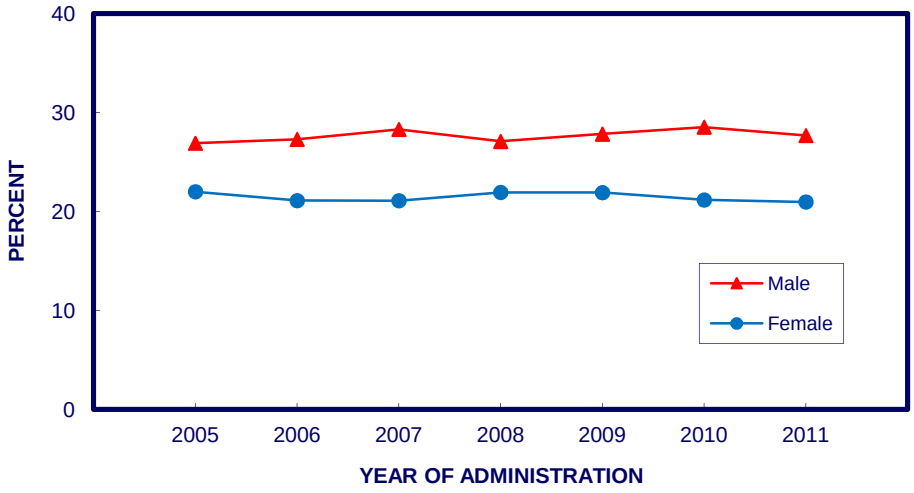


Trends (2-year average) in Lifetime Needle Sharing by Gender among Respondents of Modal Age 35

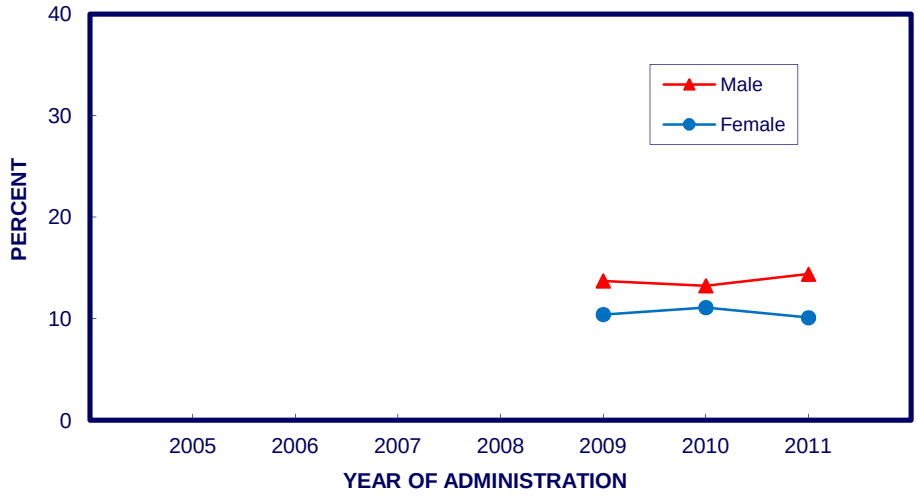


Source. The Monitoring the Future study, the University of Michigan.

FIGURE 4
Trends (2-year average) in Having More than One Sex Partner in the Last Year by Gender[a] among Respondents of Modal Ages 21-30



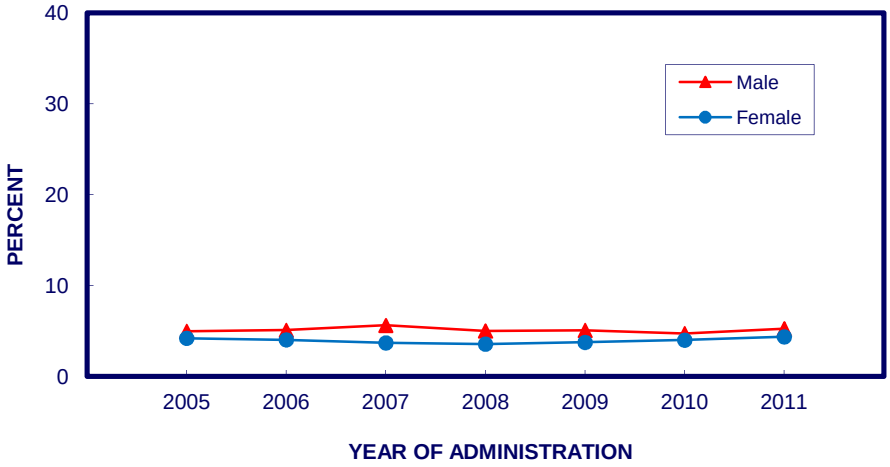
Trends (2-year average) in Having More than One Sex Partner in the Last Year by Gender[a] among Respondents of Modal Age 35



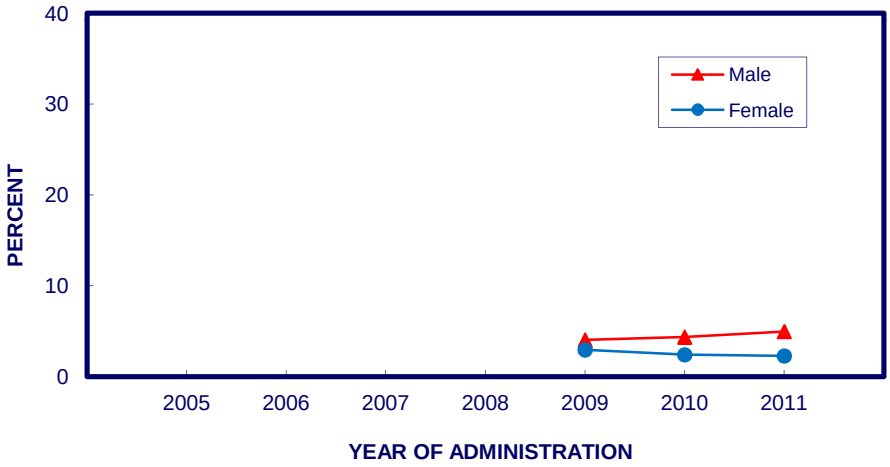
Source. The Monitoring the Future study, the University of Michigan.

[a]Based on those reporting having had an HIV/AIDS test in the last 12 months. Those respondents who have not been tested are omitted.

FIGURE 5
Trends (2-year average) in Having a Sex Partner of the Same/Both Genders by Gender[a] among Respondents of Modal Ages 21-30



Trends (2-year average) in Having a Sex Partner of the Same/Both Genders by Gender[a] among Respondents of Modal Age 35



Source. The Monitoring the Future study, the University of Michigan.

[a]Based on those reporting sexual activity with one or more partners during the past year. Those reporting no partners are omitted.

Chapter 10

TRENDS IN THE PREVALENCE AND FREQUENCY OF PROTECTIVE BEHAVIORS

Like the risk behaviors, the behaviors that can help to protect against the spread of HIV have not shown much change in the 2005–2011 interval among young adults.

Condom Use

Past-year prevalence of ***condom use*** among young adult females (Table 17a and Figure 6) showed a slight rise, but a test of a linear trend falls just short of significance ($p < .06$).

Among 35-year-olds, the prevalence and frequency of ***condom use*** increased somewhat among males, with the proportion saying that they have used them in the past 12 months rising from 35% to 42% over the 2009–2011 interval ($p < .05$). Among their female counterparts there does not appear to be an increase (Table 17b and Figure 6) with annual prevalence staying steady at 32–33%.

Getting Tested for HIV/AIDS

Young adult males show a slight falloff in both the annual and lifetime prevalence of ***getting tested*** for HIV/AIDS but a slight increase in ***securing the results*** (Table 17a and Figure 7). Their annual prevalence for getting tested fell from 16.7% in 2005 to 14.9% in 2011. While this *downward* trend among young adult males in getting tested for HIV may be real, it does not reach statistical significance ($p < .09$ for a linear trend) nor appears to have continued into 2011. At the same time, among young adult females the prevalence of getting tested in the past year rose from 23.7% in 2005 to 25.3% in 2011. This increase across the six years (2005–2011) among young women shows an upward linear trend though also appears not to have continued into 2011.

Among 35-year-old males, the lifetime prevalence of HIV ***testing*** has shown some increase, but not in past 12-month testing. The change, however, is not significant. No change is observed among females the same age, though they consistently have had higher rates of getting tested than their male counterparts. Both genders have shown a slight decline in the proportions who do not ***secure the results***—a positive development (Table 17b).

It appears that movement in both the risk and protective behaviors related to the spread of HIV in the young adult population is gradual. Over the seven year interval covered so far, we note very little movement in these factors. The only significant change observed in this timespan is a slight increase in young adult females getting tested for HIV. Unfortunately, young adult males showed a nearly significant decline in that same behavior. The slight increase in condom use among young adult females fell just short of significance. Taken together, these findings suggest that females in their 20s may be becoming somewhat more concerned about AIDS.

While we would wish the data to show greater change toward lowering the risk of HIV among young adults, the high degree of replication of findings across sequential national surveys provides considerable evidence of the reliability of these measures in a national population.

TABLE 17a

Trends[a] in Frequency of Condom Use and Testing for HIV

Total and by Gender among Respondents of Modal Ages 21–30

(Entries are percentages.)

	Total								Male								Female							
Frequency of Condom Use in Last 12 Months[b]	2004	2005	2006	2007	2008	2009	2010	2011	2004	2005	2006	2007	2008	2009	2010	2011	2004	2005	2006	2007	2008	2009	2010	2011
When you had sexual intercourse during the LAST 12 MONTHS, how often were condoms used? (This includes vaginal and anal sex, but not oral sex.)																								
Never	—	42.1	41.6	40.5	40.7	39.9	39.2	40.1	—	37.0	36.4	35.8	36.0	35.0	35.9	36.1	—	46.5	46.1	44.4	44.8	44.2	42.1	43.4
Seldom	—	13.7	13.2	13.6	13.2	13.3	14.1	14.4	—	13.7	12.8	13.3	13.8	13.3	13.0	13.7	—	13.7	13.5	13.7	12.6	13.3	15.1	15.0
Sometimes	—	12.4	13.3	13.5	13.0	13.1	13.0	12.2	—	12.8	13.0	13.3	13.2	13.4	13.2	12.7	—	12.0	13.5	13.7	12.8	12.9	12.8	11.8
Most times	—	15.5	15.2	15.2	14.9	14.5	14.2	14.7	—	17.8	18.0	16.8	15.7	15.8	16.0	16.8	—	13.5	12.9	13.9	14.3	13.4	12.6	12.9
Always	—	16.4	16.7	17.2	18.3	19.2	19.6	18.6	—	18.8	19.9	20.7	21.3	22.6	21.9	20.6	—	14.3	14.0	14.3	15.6	16.2	17.5	16.9
Weighted N =	—	*3,076*	*2,905*	*3,476*	*4,160*	*4,108*	*4,011*	*3,851*	—	*1,423*	*1,330*	*1,607*	*1,946*	*1,946*	*1,878*	*1,765*	—	*1,653*	*1,574*	*1,869*	*2,214*	*2,162*	*2,132*	*2,087*
Testing for HIV: Lifetime and Last 12 Months																								
Have you ever been tested for HIV/AIDS? (Do not include tests that you may have had when donating blood or blood plasma.)																								
Yes, in the last 12 months	—	20.4	19.6	20.1	20.9	21.3	20.6	20.5	—	16.7	16.0	16.0	16.4	16.2	14.5	14.9	—	23.7	22.9	23.8	24.9	25.9	26.1	25.3
Yes, but not in the last 12 months	—	24.0	23.9	23.5	22.9	22.6	22.9	22.1	—	21.2	20.8	21.2	20.7	20.1	19.8	18.7	—	26.5	26.6	25.5	24.8	24.9	25.7	25.0
No, never	—	55.7	56.5	56.4	56.2	56.1	56.5	57.5	—	62.2	63.2	62.8	62.9	63.8	65.7	66.3	—	49.8	50.6	50.7	50.3	49.2	48.2	49.7
Weighted N =	—	*3,664*	*3,459*	*4,098*	*4,882*	*4,853*	*4,790*	*4,658*	—	*1,738*	*1,629*	*1,919*	*2,293*	*2,301*	*2,265*	*2,174*	—	*1,927*	*1,830*	*2,179*	*2,589*	*2,553*	*2,524*	*2,485*
Received HIV Test Results[c]																								
Did you receive the results of your most recent HIV/AIDS test? (We don't want to know your test results.)																								
Yes	—	92.2	92.8	92.5	92.7	93.1	93.7	94.2	—	89.8	91.2	92.2	92.0	91.4	91.3	92.5	—	93.9	93.8	92.7	93.2	94.2	95.1	95.2
No	—	7.8	7.2	7.5	7.3	6.9	6.3	5.8	—	10.2	8.8	7.8	8.0	8.6	8.7	7.5	—	6.1	6.2	7.3	6.8	5.8	4.9	4.8
Weighted N =	—	*1,610*	*1,486*	*1,764*	*2,113*	*2,110*	*2,059*	*1,953*	—	*655*	*591*	*701*	*842*	*823*	*760*	*715*	—	*955*	*895*	*1,063*	*1,271*	*1,287*	*1,299*	*1,238*

Source. The Monitoring the Future study, the University of Michigan.

Notes. ' — ' indicates not applicable.

[a]Data presented in this table are two-year moving averages. The 2005 data is 2004 and 2005 combined and so forth. The questions were contained in two questionnaire forms in 2004-2006 and three forms beginning in 2007.

[b]Percentages based on those reporting sex with one or more partners during the last 12 months. Those reporting no partners are omitted.

[c]Those respondents who report never having been tested for HIV are excluded from these percentages.

TABLE 17b

Trends[a] in Frequency of Condom Use and Testing for HIV

Total and by Gender among Respondents of Modal Age 35

(Entries are percentages.)

	Total				Male				Female			
Frequency of Condom Use in Last 12 Months[b]	2008	2009	2010	2011	2008	2009	2010	2011	2008	2009	2010	2011
When you had sexual intercourse during the LAST 12 MONTHS, how often were condoms used? (This includes vaginal and anal sex, but not oral sex.)												
Never	—	66.5	64.8	63.5	—	65.4	61.8	58.4	—	67.5	67.7	68.1
Seldom	—	8.0	8.6	8.4	—	7.4	8.6	10.3	—	8.6	8.6	6.8
Sometimes	—	8.6	9.3	9.1	—	8.9	10.2	11.2	—	8.3	8.5	7.3
Most times	—	6.9	8.0	9.2	—	8.0	9.4	11.0	—	5.9	6.7	7.6
Always	—	10.0	9.2	9.7	—	10.2	10.0	9.2	—	9.8	8.5	10.2
Weighted N =	—	*1,306*	*1,702*	*1,605*	—	*637*	*823*	*747*	—	*670*	*879*	*857*
Testing for HIV: Lifetime and Last 12 Months												
Have you ever been tested for HIV/AIDS? (Do not include tests that you may have had when donating blood or blood plasma.)												
Yes, in the last 12 months	—	15.0	15.0	15.4	—	11.8	12.1	12.3	—	18.1	17.7	18.1
Yes, but not in the last 12 months	—	38.6	38.1	41.1	—	32.5	32.2	35.8	—	44.3	43.7	45.9
No, never	—	46.4	46.9	43.5	—	55.7	55.8	51.9	—	37.6	38.6	36.1
Weighted N =	—	*1,452*	*1,903*	*1,787*	—	*707*	*918*	*840*	—	*745*	*985*	*947*
Received HIV Test Results[c]												
Did you receive the results of your most recent HIV/AIDS test? (We don't want to know your test results.)												
Yes	—	92.4	93.2	94.8	—	89.3	89.6	91.1	—	94.5	95.6	97.2
No	—	7.6	6.8	5.2	—	10.7	10.4	8.9	—	5.5	4.4	2.8
Weighted N =	—	*764*	*1,000*	*996*	—	*310*	*402*	*397*	—	*454*	*598*	*599*

Source. The Monitoring the Future study, the University of Michigan.

Notes. ' — ' indicates not applicable.

[a]Data presented in this table are two-year moving averages. The 2005 data is 2004 and 2005 combined and so forth. The questions were contained in two questionnaire forms in 2004–2006 and three forms beginning in 2007.

[b]Percentages based on those reporting sex with one or more partners during the last 12 months. Those reporting no partners are omitted.

[c]Those respondents who report never having been tested for HIV are excluded from these percentages.

TABLE 17c

Use of Condoms in Past Year by 2-Year Age Groups[a] among Young Adults

(Entries are percentages.)

	Year of Administration								
	2004	2005	2006	2007	2008	2009	2010	2011	2004–2011
Age 21–22									
Frequency of Condom Use in Past Year:									
Never	26.1	26.6	26.8	23.5	23.4	23.8	22.7	25.9	24.6
Seldom/Sometimes	32.5	30.7	29.8	28.7	28.7	28.7	29.0	30.6	29.7
Most times/Always	41.4	42.6	43.4	47.8	47.9	47.5	48.3	43.5	45.7
Weighted N =	*307*	*266*	*266*	*376*	*424*	*419*	*394*	*351*	*2,803*
Age 23–24									
Frequency of Condom Use in Past Year:									
Never	36.8	36.2	31.1	30.1	33.2	30.2	31.8	34.3	32.8
Seldom/Sometimes	28.8	30.8	28.8	29.0	31.7	24.7	27.2	28.5	28.6
Most times/Always	34.4	33.0	40.1	40.9	35.1	45.1	41.1	37.2	38.5
Weighted N =	*322*	*316*	*284*	*398*	*422*	*394*	*398*	*399*	*2,933*
Age 25–26									
Frequency of Condom Use in Past Year:									
Never	43.1	39.5	41.6	40.1	40.4	40.6	40.8	38.0	40.5
Seldom/Sometimes	23.5	27.1	29.2	27.8	21.6	29.4	30.5	26.3	27.0
Most times/Always	33.4	33.4	29.3	32.1	37.9	30.0	28.7	35.7	32.6
Weighted N =	*331*	*299*	*273*	*408*	*387*	*392*	*417*	*355*	*2,862*
Age 27–28									
Frequency of Condom Use in Past Year:									
Never	47.0	55.2	50.2	49.6	53.3	47.7	46.7	50.6	50.0
Seldom/Sometimes	27.1	19.8	24.2	25.6	22.9	28.4	26.1	24.0	24.8
Most times/Always	33.4	25.0	25.6	24.8	23.9	23.8	27.2	25.4	25.2
Weighted N =	*308*	*320*	*312*	*413*	*409*	*387*	*388*	*365*	*2,903*
Age 29–30									
Frequency of Condom Use in Past Year:									
Never	54.3	53.8	51.3	54.8	53.7	51.8	55.9	53.4	53.7
Seldom/Sometimes	21.4	19.4	25.8	23.1	23.1	24.6	21.9	22.0	22.7
Most times/Always	24.3	26.8	22.9	22.1	23.2	23.6	22.2	24.6	23.6
Weighted N =	*319*	*287*	*281*	*464*	*459*	*416*	*405*	*379*	*3,010*

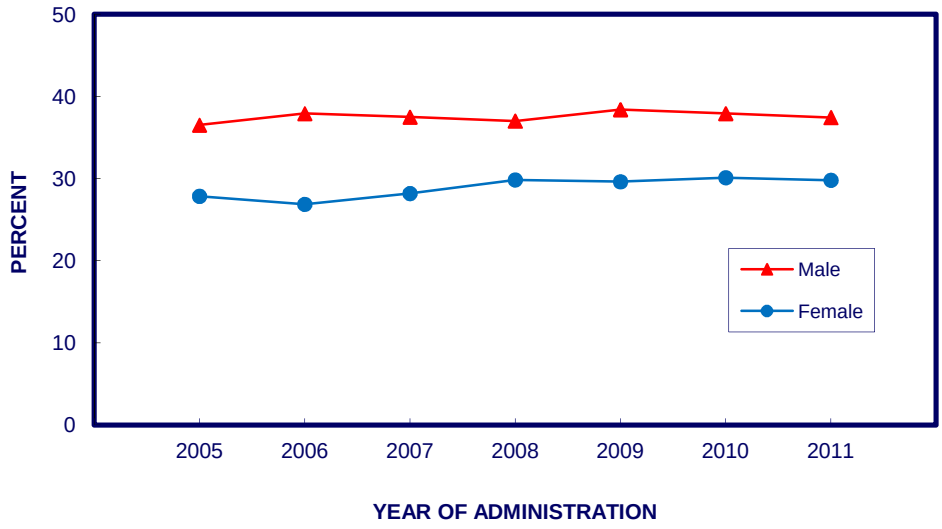
Source. The Monitoring the Future study, the University of Michigan.

[a]In 2004–2006, the questions about condom use were included in two questionnaire forms. In 2007, these questions were added to a third questionnaire form.

FIGURE 6

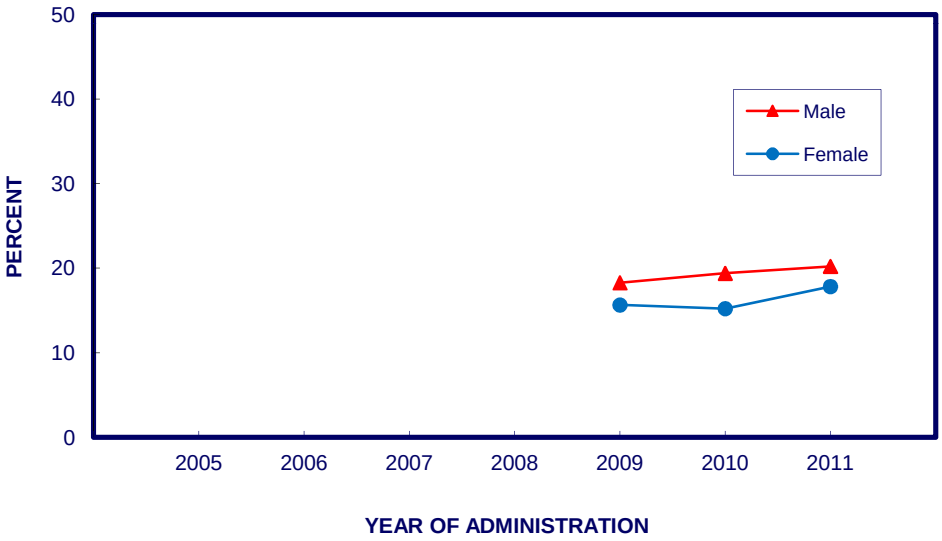
Trends (2-year average) in Annual Condom Use by Gender[a] among Respondents of Modal Ages 21-30

(most times or always)



Trends (2-year average) in Annual Condom Use by Gender[a] among Respondents of Modal Age 35

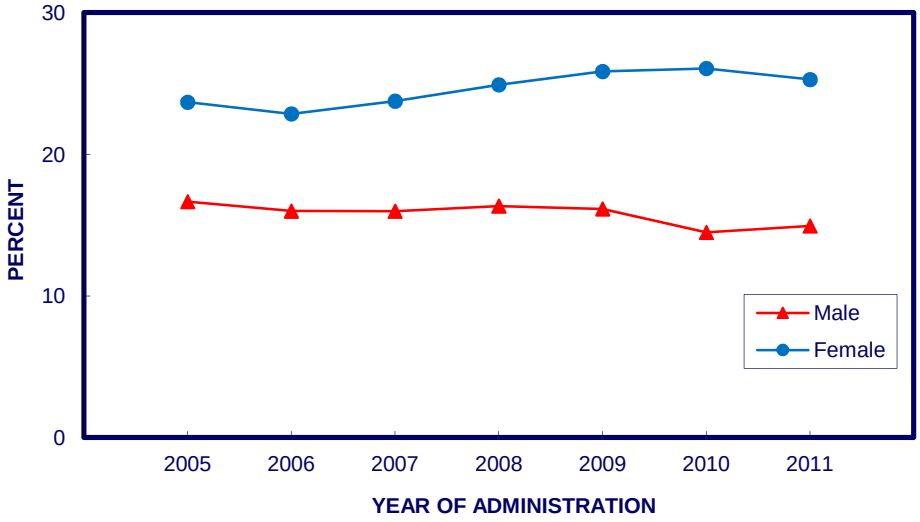
(most times or always)



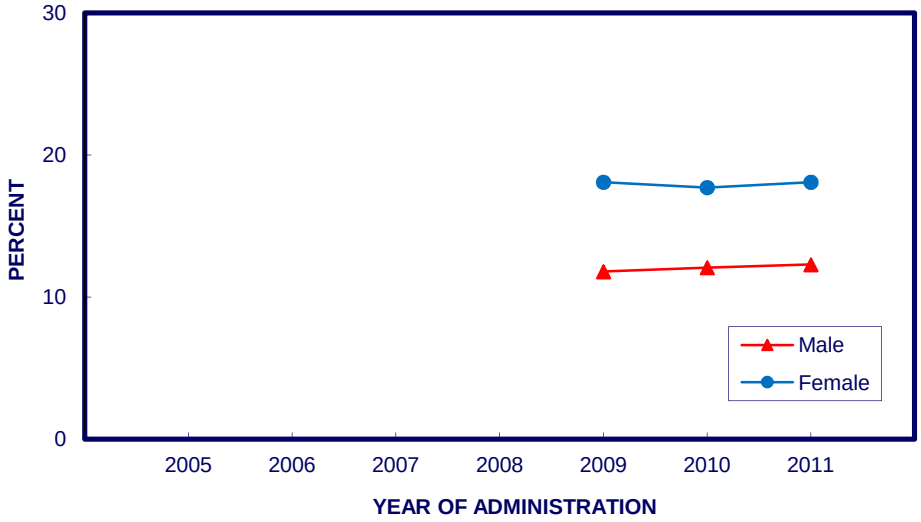
Source. The Monitoring the Future study, the University of Michigan.

[a]Based on those reporting sexual activity with one or more partners during the past year. Those

FIGURE 7
Trends (2-year average) in Having an HIV/AIDS Test in the Past Year by Gender among Respondents of Modal Ages 21-30



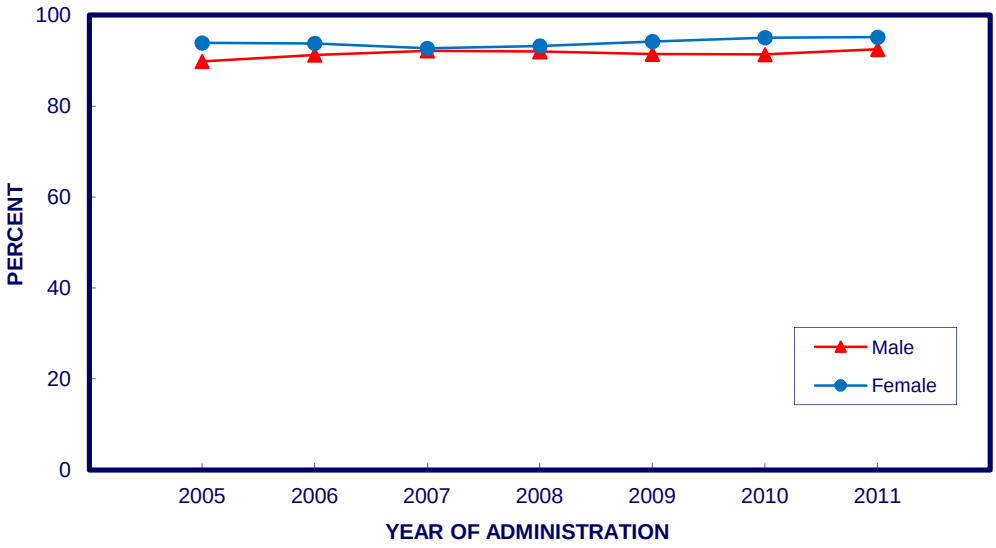
Trends (2-year average) in Having an HIV/AIDS Test in the Past Year by Gender among Respondents of Modal Age 35



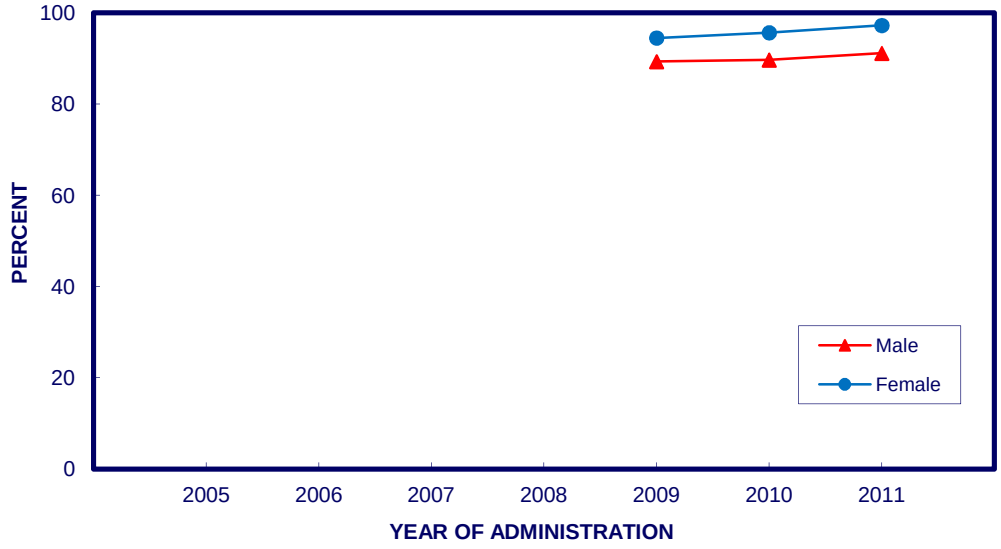
Source. The Monitoring the Future study, the University of Michigan.

FIGURE 8

Trends (2-year average) in Receiving HIV/AIDS Test Results by Gender[a] among Respondents of Modal Ages 21-30



Trends (2-year average) in Receiving HIV/AIDS Test Results by Gender[a] among Respondents of Modal Age 35



Source. The Monitoring the Future study, the University of Michigan.

[a]Those respondents who report never having been tested for HIV are excluded from these percentages.

CHAPTER 11

BLOOD DONATION

In this chapter, we examine the prevalence of blood donation. We examine the intersections of blood donation reported by those who also report HIV-risk behaviors such as men having sex with men, injection drug use, and having multiple sex partners.

Donating Blood

While donating blood carries no risk of *contracting* an HIV infection, because only new and sterile needles are used to draw blood from donors, it continues to present a slight possibility of *transmitting* HIV if the donor is infected. This section covers the overall prevalence of blood donation shown in Tables 18a, 18b, and 18c.

- The proportion of young adult respondents saying that they have donated blood or blood plasma during their lifetime is 45% overall, with similar proportions for males and females (Table 18a).

- Blood donation in the previous 12 months was reported by 11% overall—12% of males and 10% of females.

- As might be expected given the longer opportunity time, a slightly higher proportion of age 35- and 40-year olds reported ever having donated blood (50% and 54%) than did the young adults (45%), but the proportions doing so in the last 12 months did not differ greatly (10.6% of young adults, 8.4% of 35-year-olds, and 9.7% of 40-year-olds).

Donating Blood by Gender of Sex Partners

- About equal proportions of young adult males who reported any male sex partner(s) including those having sex with both genders during the previous 12 months (41% based on 352 weighted observations) and males who reported only female sex partners (47%) said they had *ever* donated blood (Table 19a). Slightly fewer of the men reporting any male sex partner(s) said they donated blood in the prior 12 months (8.4%, versus 12% among males reporting only female partners), a statistically significant difference. However, it is clear that by no means all individuals in this elevated risk group abstain from donating blood, as the Food and Drug Administration requires.[7] Rather, their rate of blood donation, particularly in their lifetime, appears fairly similar to the rate for all males.

- All three groups of young adult females have fairly similar rates of blood donation (Table 19a).

[7]U.S.Food and Drug Administration. Blood donation from men who have sex with other men questions, and answers (Last updated 06/18/09.) Accessed 9/30/12 at http://www.fda.gov/biologicsbloodvaccines/bloodbloodproducts/questionsaboutblood/ucm108186.htm.

- Among the 35- and 40-year-old respondents, the case counts for some of the same-sex and both-sex groups are too small to date to yield meaningful comparison across all groups (Tables 19b and 19c.).

Donating Blood by Number of Sex Partners

- The results in Table 18a for young adults show little systematic association between the number of sex partners reported in the prior 12 months and the prevalence of donating blood in the prior 12 months. Lifetime prevalence of donating blood is lower in the group reporting no sex partners in the prior 12 months than in the other groups, but past year donating is the same.
- Among the 35- and 40-year-olds the results are similar (Tables 20b and 20c).

Donating Blood by Injection Drug Use

- As a group, young adult blood donors have a very similar rate of lifetime and annual injection drug use to those not donating blood, although those who have ever injected a drug outside of medical supervision are supposed to be screened out based on their answers to the screening questionnaires (Table 21a).
- There is an inadequate sample size to examine the intersection between needle sharing and blood donation among those 35 and 40 years old. In the future, by concatenating across years, we may be able to examine this intersection.

Trends in Donating Blood

- The prevalence of blood donation overall (Table 22a and Figure 9) shows no systematic change among young adults. Past year prevalence blood donation has generally been slightly higher among young adult males (around 11% to 12%) than among young adult females (around 9% to 10%; Table 20a), with neither gender showing much of a systematic trend over the six year interval from 2005 to 2011.

- Neither is there any systematic change in the rates of blood donation observable among the 35-year-olds; and again males show a slightly higher rate compared to females (Table 22b).

- Three higher risk groups are men who have sex with men, people who have a high number of sex partners, and those who have shared needles. We do not yet have a sufficient numbers of cases for these important subgroups to make *trend* estimates dealing with their donating blood.

TABLE 18a
Blood Donation, Lifetime and Last 12 Months
Total and by Gender
among Respondents of Modal Ages 21–30
in 2004–2011[a] Combined

(Entries are percentages.)

	Total	Male	Female
Blood Donation: Lifetime and Last 12 Months			
Have you ever donated blood or blood plasma?			
Yes, in the last 12 months	10.6	11.6	9.7
Yes, but not in the last 12 months	34.4	34.0	34.7
No, never	55.0	54.4	55.6
Weighted N =	*17,274*	*8,128*	*9,146*

Source. The Monitoring the Future study, the University of Michigan.

[a]In 2004–2006, the HIV questions were included in two questionnaire forms. In 2007, these questions were added to a third questionnaire form.

TABLE 18b
Blood Donation, Lifetime and Last 12 Months
Total and by Gender
among Respondents of Modal Age 35
in 2008–2011[a] Combined

(Entries are percentages.)

Blood Donation: Lifetime and Last 12 Months	Total	Male	Female
Have you ever donated blood or blood plasma?			
Yes, in the last 12 months	8.4	9.5	7.4
Yes, but not in the last 12 months	41.4	41.2	41.5
No, never	50.2	49.2	51.1
Weighted N =	*3,239*	*1,546*	*1,693*

Source. The Monitoring the Future study, the University of Michigan.

[a]In 2008, the HIV questions were added to one half of the questionnaires administered to the 35-year-old respondents. In 2009 and after, these questions were included in all questionnaires for this group.

TABLE 18c
Blood Donation, Lifetime and Last 12 Months
Total and by Gender
among Respondents of Modal Age 40
in 2010–2011[a] Combined

(Entries are percentages.)

Blood Donation: Lifetime and Last 12 Months *Have you ever donated blood or blood plasma?*	Total	Male	Female
Yes, in the last 12 months	9.7	9.4	10.1
Yes, but not in the last 12 months	44.8	48.7	41.1
No, never	45.5	41.9	48.9
Weighted N =	*1,807*	*870*	*937*

Source. The Monitoring the Future study, the University of Michigan.

[a]The HIV questions were added to the questionnaires for 40-year-olds beginning in 2010.

TABLE 19a

Blood Donation by Gender of Sex Partners in Last 12 Months among Respondents of Modal Ages 21–30 in 2004–2011[a] Combined

(Entries are percentages.)

	MALE RESPONDENTS			FEMALE RESPONDENTS		
	Gender of Partner(s)			Gender of Partner(s)		
	Female Only	Male Only	Male and Female	Male Only	Female Only	Male and Female
Blood Donation: Lifetime and Last 12 Months						
Have you ever donated blood or blood plasma?						
Yes, in the last 12 months	11.8	8.7	6.9	9.7	7.5	7.4
Yes, but not in the last 12 months	35.5	29.8	43.7	35.6	41.9	38.3
No, never	52.7	61.4	49.4	54.7	50.6	54.4
Weighted N =	*6,412*	*291*	*61*	*7,519*	*167*	*147*

Source. The Monitoring the Future study, the University of Michigan.

[a]In 2004–2006, the HIV questions were included in two questionnaire forms. In 2007, these questions were added to a third questionnaire form.

TABLE 19b

Blood Donation by Gender of Sex Partners in Last 12 Months among Respondents of Modal Age 35 in 2008–2011[a] Combined

(Entries are percentages.)

	MALE RESPONDENTS			FEMALE RESPONDENTS		
	Gender of Partner(s)			Gender of Partner(s)		
	Female Only	Male Only	Male and Female	Male Only	Female Only	Male and Female
Blood Donation: Lifetime and Last 12 Months						
Have you ever donated blood or blood plasma?						
Yes, in the last 12 months	10.1	3.7	†	7.2	†	†
Yes, but not in the last 12 months	42.5	37.5	†	41.4	†	†
No, never	47.4	58.8	†	51.4	†	†
Weighted N =	*1,318*	*50*	*13*	*1,486*	*26*	*13*

Source. The Monitoring the Future study, the University of Michigan.

Notes. ' † ' indicates that the sample size is too limited to provide reliable estimates.

[a]In 2008, the HIV questions were added to one half of the questionnaires administered to the 35-year-old respondents. In 2009 and after, these questions were included in all questionnaires for this group.

TABLE 19c

Blood Donation by Gender of Sex Partners in Last 12 Months among Respondents of Modal Age 40 in 2010–2011[a] Combined

(Entries are percentages.)

	MALE RESPONDENTS			FEMALE RESPONDENTS		
	Gender of Partner(s)			Gender of Partner(s)		
	Female Only	Male Only	Male and Female	Male Only	Female Only	Male and Female
Blood Donation: Lifetime and Last 12 Months						
Have you ever donated blood or blood plasma?						
Yes, in the last 12 months	9.2	6.2	†	10.7	†	†
Yes, but not in the last 12 months	52.0	33.1	†	42.2	†	†
No, never	38.8	60.7	†	47.1	†	†
Weighted N =	*741*	*37*	*1*	*791*	*10*	*10*

Source. The Monitoring the Future study, the University of Michigan.

Notes. ' † ' indicates that the sample size is too limited to provide reliable estimates.

[a]The HIV questions were added to the questionnaires for 40-year-olds beginning in 2010.

TABLE 20a

Blood Donation, Lifetime and Last 12 Months by Number of Sex Partners in Last 12 Months among Respondents of Modal Ages 21–30 in 2004–2011[a] Combined

(Entries are percentages.)

	Number of Partners in Last 12 Months				
Blood Donation: Lifetime and Last 12 Months	None	One	Two	Three or Four	Five or More
Have you ever donated blood or blood plasma?					
Yes, in the last 12 months	11.4	10.4	11.6	10.2	11.1
Yes, but not in the last 12 months	27.5	36.4	30.2	36.8	33.8
No, never	61.1	53.2	58.1	53.0	55.1
Weighted N =	*2,484*	*10,438*	*1,661*	*1,604*	*910*

Source. The Monitoring the Future study, the University of Michigan.

[a]In 2004–2006, the HIV questions were included in two questionnaire forms. In 2007, these questions were added to a third questionnaire form.

TABLE 20b

Blood Donation, Lifetime and Last 12 Months by Number of Sex Partners in Last 12 Months among Respondents of Modal Age 35 in 2008–2011[a] Combined

(Entries are percentages.)

	Number of Partners in Last 12 Months				
Blood Donation: Lifetime and Last 12 Months *Have you ever donated blood or blood plasma?*	None	One	Two	Three or Four	Five or More
Yes, in the last 12 months	7.2	8.8	6.1	8.4	7.8
Yes, but not in the last 12 months	34.2	41.8	37.6	54.1	36.3
No, never	58.6	49.4	56.2	37.5	55.9
Weighted N =	*292*	*2,539*	*149*	*166*	*72*

Source. The Monitoring the Future study, the University of Michigan.

[a]In 2008, the HIV questions were added to one half of the questionnaires administered to the 35-year-old respondents. In 2009 and after, these questions were included in all questionnaires for this group.

TABLE 20c

Blood Donation, Lifetime and Last 12 Months by Number of Sex Partners in Last 12 Months among Respondents of Modal Age 40 in 2010–2011[a] Combined

(Entries are percentages.)

	Number of Partners in Last 12 Months				
Blood Donation: Lifetime and Last 12 Months	None	One	Two	Three or Four	Five or More
Have you ever donated blood or blood plasma?					
Yes, in the last 12 months	7.2	10.4	8.8	3.0	12.7
Yes, but not in the last 12 months	33.1	46.5	43.7	44.2	47.3
No, never	59.7	43.1	47.4	52.8	40.0
Weighted N =	*201*	*1,425*	*81*	*58*	*37*

Source. The Monitoring the Future study, the University of Michigan.

[a]The HIV questions were added to the questionnaires for 40-year-olds beginning in 2010.

TABLE 21a

Injection Drug Use by Blood Donation

among Respondents of Modal Ages 21–30 in 2004–2011[a] Combined

(Entries are percentages.)

		Blood Donation		
Lifetime Frequency of Injecting		Yes, in last 12 months	Yes, but not in last 12 months	No, never
On how many occasions (if any) have you taken any drugs by injection with a needle (like heroin, cocaine, amphetamines, or steroids) in your lifetime? Do not include anything you took under a doctor's orders.				
Total				
0 Occasions		98.5	98.1	98.6
1+ Occasions		1.5	1.9	1.4
	Weighted N =	*1,827*	*5,881*	*9,413*
Male				
0 Occasions		97.6	97.3	97.8
1+ Occasions		2.4	2.7	2.2
	Weighted N =	*939*	*2,739*	*4,371*
Female				
0 Occasions		99.5	98.7	99.2
1+ Occasions		0.5	1.3	0.8
	Weighted N =	*887*	*3,142*	*5,042*
Annual Frequency of Injecting				
On how many occasions (if any) have you taken any drugs by injection with a needle (like heroin, cocaine, amphetamines, or steroids) during the last 12 months? Do not include anything you took under a doctor's orders.				
Total				
0 Occasions		99.5	99.3	99.6
1+ Occasions		0.5	0.7	0.4
	Weighted N =	*1,829*	*5,884*	*9,417*
Male				
0 Occasions		99.1	98.9	99.5
1+ Occasions		0.9	1.1	0.5
	Weighted N =	*940*	*2,741*	*4,372*
Female				
0 Occasions		99.9	99.7	99.8
1+ Occasions		0.1	0.3	0.2
	Weighted N =	*888*	*3,143*	*5,045*

Source. The Monitoring the Future study, the University of Michigan.

[a]In 2004–2006, the HIV questions were included in two questionnaire forms. In 2007, these questions were added to a third questionnaire form.

TABLE 22a
Trends[a] in Blood Donation
among Respondents of Modal Ages 21–30

(Entries are percentages.)

Blood Donation: Lifetime and Last 12 Months	Total								Male								Female							
	2004	2005	2006	2007	2008	2009	2010	2011	2004	2005	2006	2007	2008	2009	2010	2011	2004	2005	2006	2007	2008	2009	2010	2011
Have you ever donated blood or blood plasma?																								
Yes, in the last 12 months	—	10.9	11.3	10.5	10.0	10.5	10.6	10.6	—	11.9	12.5	11.8	11.0	11.4	11.2	11.5	—	10.1	10.2	9.3	9.1	9.7	10.0	9.9
Yes, but not in the last 12 months	—	33.8	33.2	34.2	35.6	34.5	34.2	34.6	—	33.6	32.2	33.1	35.7	33.6	33.7	35.3	—	33.9	34.1	35.2	35.6	35.3	34.6	34.0
No, never	—	55.3	55.6	55.3	54.4	55.0	55.3	54.7	—	54.5	55.4	55.1	53.3	55.0	55.2	53.2	—	56.0	55.7	55.5	55.3	55.0	55.3	56.1
Weighted N =	—	*3,669*	*3,463*	*4,096*	*4,876*	*4,847*	*4,784*	*4,661*	—	*1,744*	*1,629*	*1,917*	*2,289*	*2,294*	*2,260*	*2,173*	—	*1,926*	*1,833*	*2,179*	*2,587*	*2,553*	*2,524*	*2,488*

Source. The Monitoring the Future study, the University of Michigan.

Notes. ' — ' indicates not applicable.

[a]Data presented in this table are two-year moving averages. The 2005 data is 2004 and 2005 combined and so forth. The 2007 data is a simple average of 2006 and 2007, because these questions were included in two questionnaire forms in 2006 and three forms beginning in 2007.

TABLE 22b
Trends[a] in Blood Donation
among Respondents of Modal Age 35

(Entries are percentages.)

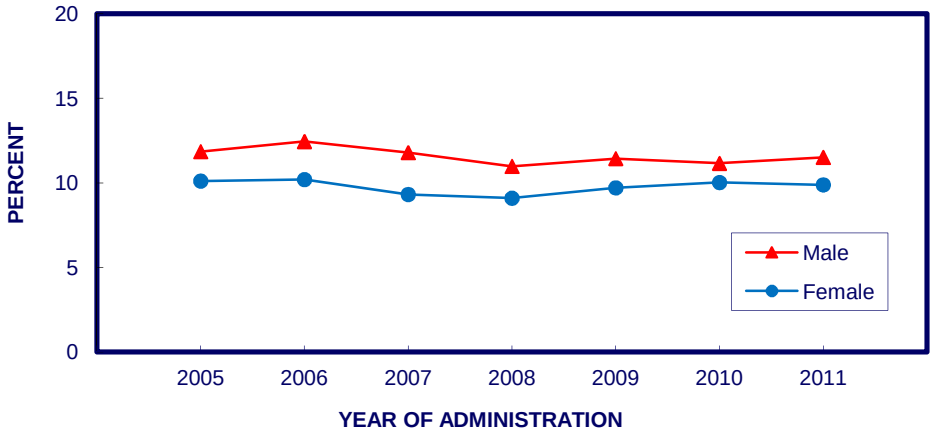
Blood Donation: Lifetime and Last 12 Months	Total				Male				Female			
	2008	2009	2010	2011	2008	2009	2010	2011	2008	2009	2010	2011
Have you ever donated blood or blood plasma?												
Yes, in the last 12 months	—	8.2	8.2	8.5	—	9.5	9.8	9.5	—	7.0	6.8	7.6
Yes, but not in the last 12 months	—	41.3	40.9	41.5	—	40.2	40.2	42.1	—	42.3	41.6	41.0
No, never	—	50.5	50.9	50.0	—	50.3	50.1	48.4	—	50.7	51.6	51.4
Weighted N =	—	*1,454*	*1,900*	*1,785*	—	*710*	*918*	*836*	—	*745*	*982*	*948*

Source. The Monitoring the Future study, the University of Michigan.

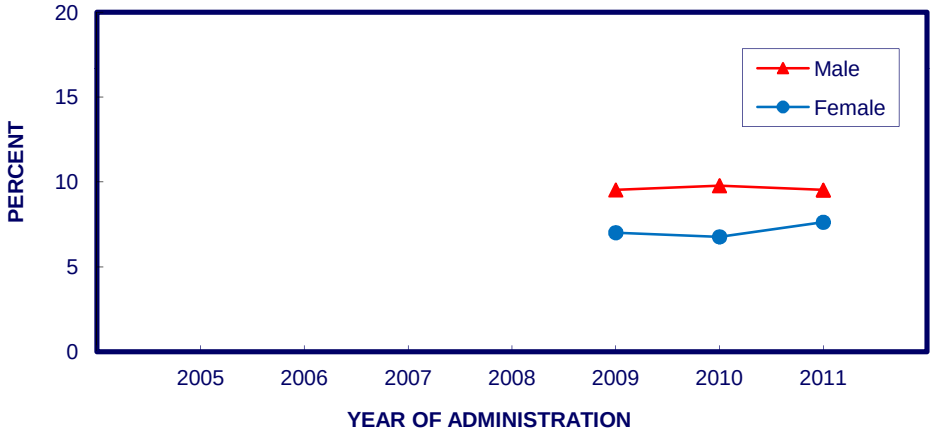
Notes. ' — ' indicates not applicable.

[a]Data presented in this table are two-year moving averages. The 2009 data is 2008 and 2009 combined and so forth. The questions were contained in three of the six questionnaire forms.

FIGURE 9
Trends (2-year average) in Annual Blood Donation by Gender among Respondents of Modal Ages 21-30



Trends (2-year average) in Annual Blood Donation by Gender among Respondents of Modal Age 35



Source. The Monitoring the Future study, the University of Michigan.

Chapter 12

CONCLUSIONS

Risk behaviors for the spread of HIV/AIDS are all too prevalent among today's young adults. The number of young adults who engage in sex with multiple partners and the number of men who engage in the high-risk behavior of having unprotected sex with other men are perhaps the most important. About one quarter (24%) of young adults aged 21 to 30 indicated having more than one sex partner in the prior 12 months, 9% said they had more than three partners (12% of males and 7% of females), and 5% said they had five or more partners. Among sexually active male respondents, about one in twenty (5.2%) indicated having had any sex with a male partner in the prior 12 months, with the majority of them (constituting 4.3% of the total sample of males) reporting having had *only* male partners.

Men reporting sex exclusively with men are considerably more likely to have multiple partners than men reporting sex exclusively with women, thus compounding their risk. While men who have sex exclusively with men use condoms slightly more frequently than men who have sex exclusively with women, the differences are small and not statistically significant—41% of the former group say they use condoms "most times" or "always" versus 37% in the latter group.

The protective behavior of condom use rises considerably with the number of sex partners reported. The higher the number of partners reported, the higher the rate of condom use; this holds true for both genders.

Some 40% of men who report having sex exclusively with men in the prior 12 months indicate having been tested for HIV/AIDS in the same interval. This compares with only 17% of men who report having sex exclusively with women. (Men who have sex exclusively with men are also more likely to obtain the results of the test.) Among all respondents, the proportion getting tested for HIV/AIDS rises with the number of sex partners reported, though even among those with five or more partners during the year, only 38% indicate being tested in that interval. These data suggest that a number of people recognize that their sexual practices put them at greater risk and take action to determine whether they are already infected. One risk group that does not seem to attempt to compensate for their high level of risk is those who have shared needles when taking drugs. Based on somewhat limited numbers of cases, they are significantly less likely than non-needle-sharers to get tested for HIV and their use of condoms may be below average as well, though the data are not yet conclusive on this point. That can be a particularly important act, because it can allow a person testing positive to initiate treatment and to protect against spreading the disease to others either by refraining from sexual contact or by using condoms. Interestingly, condom use and HIV testing—two risk reduction behaviors—do not seem to correlate with each other, as might have been expected.

Donating blood is not a risk factor for contracting HIV. But those who are otherwise at high risk for contracting HIV who do give blood (against blood donation instructions) put the population at some risk. For example, men who have had sex with men are not supposed to donate blood, based on the FDA and Red Cross regulations regarding eligibility. (See http://www.fda.gov/biologicsbloodvaccines/bloodbloodproducts/questionsaboutblood/default.htm; http://www.redcrossblood.org/donating-blood/eligibility-requirements/eligibility-criteria-topic#lifestyle. However, the evidence here is that relatively few are deterred from doing so.

Some 41% of males who report having any sex with men in the prior year indicate having given blood at some time in their lifetime (vs. 47% for those not reporting sex with men), and 8.4% indicate donating in just the past year (vs. 12%). Further, those donating blood have a very similar rate of lifetime and annual injection drug use to those not donating blood, though they are supposed to be deselected from donating based on their answers to the screening questionnaires. Finally, respondents reporting high numbers of sex partners donate blood in similar proportions as those reporting few partners (though they are not asked to screen themselves out of the pool of donors.) Thus it seems that blood banks have not been entirely successful at screening out these higher-risk donors, despite considerable attempts to do so.

"Only" about 0.4% of 21- to 30-year-old respondents surveyed in 2004–2011 (combined) admitted to ever sharing needles in their lifetime—0.1% in the prior 12 months. Although these respondents represent a small proportion of the population, they are at particularly high-risk for contracting HIV, and we believe it likely that our estimates of the size of this group are low.

Findings reported here for young adults are based on the eight years of data collection combined; and, as we have stated at various points in this monograph, even then the numbers of cases often are not sufficient to provide statistical confidence particularly with the relatively rare behaviors. But the prevalence data tend to replicate across years, giving us increased confidence in their validity.

The extent to which these HIV/AIDS risk and protective behaviors are changing over time is of great importance to the country, and the evidence here from the most recent seven-year interval suggests that rather little change is taking place in the general population of young adults who have completed high school. One of the few changes to achieve statistical significance is a gradual decline in the proportion of young adult males who report ever getting tested for HIV/AIDS—a change in the *wrong* direction. One positive development is that the proportion of all young adults who fail to secure their test results started out low in 2004—the beginning year for this study—and became still lower in 2011 by a statistically significant amount. Overall, there is not much evidence of progress in HIV risk reduction being made during this period[8]. The stability in these key risk and protective behaviors likely helps to explain the recent stability in the incidence of new HIV infections, as reported by Prejean et al. (2011) for the entire U.S. population.

As we have argued in the context of drug abuse, there is always a danger of *generational forgetting*—that through generational replacement, younger cohorts may not acquire the knowledge and concern about risks that earlier cohorts possessed and that led them to avoid risky behaviors. It seems likely that there has been a considerable shift over the past two decades in the perceived dangers of HIV/AIDS, leaving recent cohorts of young adults more vulnerable to taking risks. In particular, survival rates for those having AIDS have increased, starting around 1996 with the introduction of antiretroviral therapy (Crum et al., 2006); see also http://www.cdc.gov/media/pressrel/aids-d1.htm. This is certainly a very favorable development—but one that also carries its own risks for incoming cohorts of young adults.

[8]It should be noted that we have not been able to make estimates for some of the highest risk subgroups in the population as identified by the Centers for Disease Control & Prevention (March 14, 2012): these include (in order after White men who have sex with men [MSM]) Black MSM, Hispanic/Latino MSM, Black heterosexual women, Black heterosexual men, Hispanic/Latina heterosexual women, (followed by White heterosexual women), etc. To be able to make meaningful estimates for these subgroups would require much larger samples than we have.

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APPENDIX

OTHER RELEVANT STUDIES OF THE GENERAL POPULATION

The six other studies that generate information on risk and protective behaviors on national samples of the U.S. population are described below. The degree of overlap with MTF is discussed for each.

National Longitudinal Study of Adolescent Health (Add Health). The Add Health study is a nationally representative, longitudinal study of U.S. youth who were in grades 7–12 during the 1994–1995 school year. The original panel, surveyed in-home, was comprised initially of around 21,000 individuals, with about 15,000 interviewed at waves 2, 3, and 4. This set of class cohorts has been followed into adulthood, with additional data collection waves in 1996, 2001/2002, and 2007/2008 (Harris et al., 2008). Collected data include measures on perceived risk of HIV/AIDS, sexual behavior history, contraceptive use, sexually transmitted disease (STD) history, and substance use including injection drug use (IDU) and needle sharing. Not all of the HIV/AIDS risk behavior measures are asked at each wave of data collection. Analyses published with Add Health data have shown important racial/ethnic differences in contraceptive use (including condom use) and number of sexual partners (Bartlett & Shattell, 2008), prevalence rates of STDs and HIV infections, as well as sexual behavior and substance use patterns (Hallfors et al., 2007; Kuo & Lawrence, 2006; Morris, et al., 2006). It also has shown relationships between chronic depression and having multiple sexual partners (Khan et al., 2009). Important sociodemographic differences in self-reported HIV testing have also been found (Nguyen et al., 2006). The Add Health study, which uses in-home data collections, follows one set of six adjacent class cohorts, in contrast to MTF, which continually adds cohorts and can thus track historical trends for fixed age groups and for various cohorts over the years.

General Social Survey (GSS). Conducted by the National Opinion Research Center at the University of Chicago, GSS began in 1972 as an annual survey (although no surveys were conducted in 1979, 1981, or 1992) and went to a biennial format beginning in 1994. Prior to 2008, the study used cross-sectional surveys of the U.S. adult household population (ages 18 and over). Starting in 2008, the design was changed to a rotating panel, with each entering cohort to be followed up for the next two consecutive surveys (e.g., the 2006 cohort was interviewed in 2008 and 2010) (National Opinion Research Center, 2008). However, the HIV/AIDS risk behaviors are not included in the panel re-interviews. The majority of GSS data is obtained using face-to-face interviewing; in 2002, it switched to computer-assisted personal interviewing (CAPI). As part of the CAPI format the respondent is handed the interviewer's laptop computer to self-complete the more sensitive sections. Because MTF uses self-administered, mailed questionnaires, and thus does not have an interviewer present, a higher level of perceived privacy may exist for respondents when answering HIV/AIDS risk behavior–related items (Brener et al., 2006) resulting in more valid data. Items on sexual risk and protective factors were added to the GSS starting in 1988, and now include measures such as number and type of sex partners, ever paying for sex, heterosexual and homosexual sex, condom use, and HIV/AIDS testing. A limited

number of substance use items are asked, including injection drug use (but not needle sharing) and crack cocaine use (both asking about lifetime and past 30 days). However, the only other item on substance use (use of any illegal drugs in the past 12 months) has not been asked since 2004 (Davis & Smith, 2007). The majority of HIV/AIDS publications from the GSS have reported on sexual risk behaviors (Anderson, 2003; Anderson et al., 2003; Choi et al., 1994; Johnen et al., 1995). Given that substance use behaviors are not consistently collected in the GSS, and needle sharing is not measured, MTF provides an important additional source for data that looks at the intersection of these behaviors with other HIV/AIDS risk and protective factors. MTF also includes the collection of longitudinal panel data on both risk and protective behaviors, not just cross-sectional data as in the GSS.

National Survey on Drug Use and Health (NSDUH). Begun in 1971, the NSDUH study is now an annual, cross-sectional survey of the civilian, non-institutionalized U.S. population ages 12 and older (Substance Abuse and Mental Health Services Administration, 2006). In 1999, NSDUH was redesigned to allow state-level estimates. As suggested by the study name, the focus is on measures related to substance use, including injection drug use (IDU) (Substance Abuse and Mental Health Services Administration, 2009; Substance Abuse and Mental Health Services Administration, 2008). Published findings utilizing NSDUH data related to IDU have reported national IDU prevalence levels, as well as important demographic and geographic variation in such use (Substance Abuse and Mental Health Services Administration, 2007). Data are also collected on lifetime and past-year HIV/AIDS diagnoses, as well as related health conditions such as hepatitis and sexually transmitted diseases. However, data on participation in high-risk sexual behaviors, as well as behaviors such as needle-sharing, are not collected; which distinguishes NSDUH from MTF. Also, MTF collects longitudinal data on individuals over time as part of its cohort-sequential design, while NSDUH collects only cross-sectional data.

National Health and Nutrition Examination Survey (NHANES). NHANES began in the early 1960s as a series of surveys focusing on different population groups and health topics. In 1999, NHANES began to be conducted on a continuous basis with a nationally representative cross-sectional sample of approximately 5,000 individuals per year (Centers for Disease Control and Prevention, 2009). Data on number and type of sexual partners, as well as condom use, are collected from respondents aged 14–69. Through 2004, only limited drug use data were collected. However, beginning in 2005, age at first use, lifetime, and past 30-day use of marijuana, cocaine, heroin, methamphetamine, and injection drug use were collected from individuals aged 12–69 (needle sharing is not included). NHANES data for these items are collected using audio computer-assisted self interviewing (A-CASI) at NHANES mobile examination centers. In an A-CASI, the interviewer is aware of neither the highly sensitive questions as they are asked nor the answers being given, thus providing respondents with a high level of privacy similar to self-administered questionnaires like those used in MTF (Brener, et al., 2006). NHANES is the only national survey that collects blood samples and does test blood samples from participants aged 18–49 for the HIV antibody (Centers for Disease Control and Prevention, 2011). Longitudinal data are not collected on NHANES participants. MTF includes a broader range of substance use measures, including needle sharing, and is able to utilize panel data to examine individual change over time in HIV/AIDS risk and protective behaviors.

National Survey of Family Growth (NSFG). Sponsored by the National Center for Health Statistics, NSFG was begun in 1973 and was initially designed to be a national U.S. fertility study, with only female respondents. Beginning in 2002 (Cycle 6), the survey provided nationally representative cross-sectional samples of both males and females ages 15–44. In mid-2006, the NSFG began continuous interviewing utilizing a rolling, cumulating yearly nationally representative sample of U.S. households (Cycle 7, which ended in 2009) (Lepkowski et al., 2006). The latest cycle gathers detailed data on sexual risk behaviors of many kinds, including number of sex partners and condom use, differentiating by age and race/ethnicity (Gavin et al., 2009), other sociodemographic differences in heterosexual anal and oral sex (Leichliter et al., 2007), and sexual health risks and formal sex education (Kohler et al., 2008). Homosexual sex is also detailed in the interviews. The NSFG contains some items on substance use, including a lifetime measure of needle sharing; it also asks about diagnoses of sexually transmitted diseases related to HIV/AIDS risk behaviors. A-CASIs are used to gather data on these highly sensitive and detailed sexual behaviors, thus providing respondents with a high level of privacy. MTF uses self-administered, mailed questionnaires, which should also provide respondents with a high level of privacy that is similar to A-CASI and thus provide similarly valid data (Brener et al., 2006). Like NSDUH, longitudinal panel data are not collected on respondents in NSFG. MTF does have relevant prior and subsequent data from the respondents in its panels, including HIV/AIDS risk and protective behaviors from age 21 into later time points. Further, MTF is capable of correcting for the recanting of earlier reported behaviors (Johnston & O'Malley, 1997; Johnston et al., 2011). MTF also encompasses every cohort graduating from high school since 2004, gathering data annually on each, starting when they reach age 21.

National Youth Risk Behavior Survey (YRBS). YRBS is conducted every two years, and provides nationally representative, cross-sectional data on priority health risk behaviors for 9th- through 12th-grade students in public and private U.S. schools (Brener et al., 2004). The number of respondents averages around 16,000 cases per survey. Several HIV/AIDS-related risk behaviors have been measured since its inception in 1991, including substance use and sexual activity. Published YRBS data include national and sociodemographic group-specific prevalence measures of high school student licit and illicit substance use (including a measure of lifetime intravenous drug use), lifetime and current sexual activity (including number of partners), condom use, substance use before sexual behavior, and HIV/AIDs education and testing (Eaton et al., 2008; Voetsch et al., 2009). YRBS data have been used to examine trends over time in such behaviors (Gavin et al., 2009; Balaji et al., 2008), as well as how substance use and sexual risk behaviors interrelate (Santelli et al., 2009; Springer et al., 2007). The work of MTF complements that of the YRBS by covering respondents ages 21 to 30, a highly relevant age group for the spread of HIV/AIDS. It also contains a more complete set of drug use measures, including annual and 30-day injection drug use, and lifetime and past-year needle sharing. In addition, the longitudinal nature of MTF allows an examination of how HIV/AIDS risk behaviors change over time across age within different cohorts.

Key Distinctions among the Studies

A review of these six studies shows that, although key data are provided by each, none of the studies allows for the ongoing, cohort-sequential prospective examination of both substance use and other risk and protective behaviors for HIV/AIDS among the U.S. young adult population. YRBS does not cover age groups above age 18 or 19; GSS does not broadly examine substance use behaviors, nor does it include the HIV/AIDS risk and protective behaviors in its panels;

NSDUH does not cover sexual behaviors; Add Health covers only six class-cohorts; NSFG has longer time cycles between surveys, and NSFG, YRBS and NSDUH do not gather longitudinal panel data on their respondents. Further, most of these studies do not duplicate all of the measures of risk and protective behaviors covered in MTF. Thus, along with these other national studies, MTF is an essential component of the nation's efforts to monitor and understand HIV/AIDS risk behaviors. Whatever changes occur in the proportions of American young adults choosing to engage in these risk and risk-reduction behaviors will, of course, have very important consequences for the course of the nation’s HIV/AIDS epidemic, which is why MTF findings stand to make important contributions to our understanding of this major health problem and our ability to deal with it effectively.

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