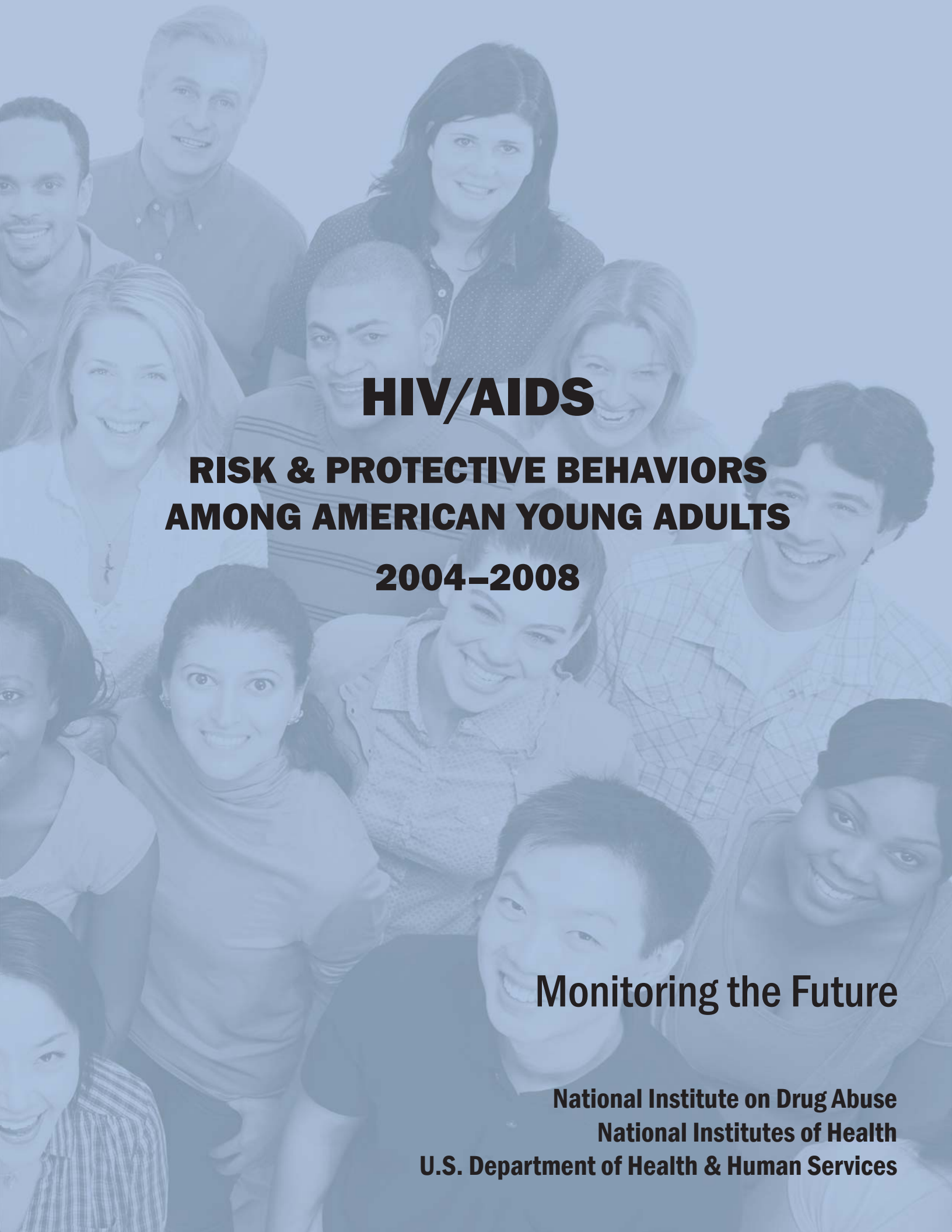

HIV/AIDS

RISK & PROTECTIVE BEHAVIORS AMONG AMERICAN YOUNG ADULTS

2004–2008

Monitoring the Future

National Institute on Drug Abuse
National Institutes of Health
U.S. Department of Health & Human Services

HIV/AIDS: RISK & PROTECTIVE BEHAVIORS AMONG AMERICAN YOUNG ADULTS, 2004–2008

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INTRODUCTION

Monitoring the Future (MTF) is a long-term study of American adolescents, college students, and adults through age 50. 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 volume becomes the fourth monograph in MTF's series of annual reports. The three other monographs are as follows: an *Overview of Key Findings,* published near the beginning of each year, which 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.[1] The much larger and more complete *Volume I,* published some months later, provides more detailed and complete findings on the same population.[2] The third monograph, entitled *Volume II*, usually is available in the fall. It provides similar prevalence and trend information on the substance-using behaviors of adult high school graduates through age 50, based on a series of follow-up surveys by mail of representative samples of students from each high school graduating class.[3] One important subgroup of the adults being surveyed annually in these follow-up surveys is college students, and *Volume II* provides findings specific to that population.

The present volume is being published separately for the first time this year. Whereas the other three MTF monographs address the topic of substance use, the present volume focuses on a range of behaviors related to the spread of the human immunodeficiency virus (HIV) responsible for the acquired immunodeficiency syndrome (AIDS). The population under study is young adult high school graduates ages 21–30 in the general population. Previously, findings on this subject were presented as a final chapter in *Volume II* based on measures of HIV/AIDS risk and protective behaviors that were introduced into the MTF follow-up studies in 2004. However, as the content expanded considerably and the historical period lengthened, a separate volume on this important topic seemed warranted.

BACKGROUND

Since the early 1980s, the spread of HIV/AIDS has become 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. Another behavior related to heightened risk is 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.[2,3,4,5,6]

A considerable literature has evolved based on studies of high-risk populations, such as men who have sex with men, but there are fewer studies of these behaviors as they occur in the general population. Currently, to our knowledge, there are five 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. Each of these surveys provides some key HIV/AIDS risk behavior data; however, as discussed below, none fully duplicates the type of HIV/AIDS-related information that can be produced by the MTF study.

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. This set of class cohorts has been followed into adulthood, with additional data collection waves in 1996, 2001/2002, and 2007/2008.[7] 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,[8] prevalence rates of STDs and HIV infections, as well as sexual behavior and substance use patterns.[9,10,11] It also has shown relationships between chronic depression and having multiple sexual partners.[12] Important sociodemographic differences in self-reported HIV testing have also been found.[13] The Add Health study 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 (in 2008, the 2006 respondents were re-interviewed, and will be interviewed again for the final time in 2010).[14] 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, a higher level of perceived privacy may exist for respondents when answering

HIV/AIDS risk behavior–related items. Items on sexual risk and protective factors began to be 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.[15] The majority of HIV/AIDS publications from the GSS have reported on sexual risk behaviors.[16,17,18,19] 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 panel data on both risk and protective behaviors.

National Survey on Drug Use and Health (NSDUH). Begun in 1971, the NSDUH study is now an annual, cross-sectional survey of the civilian, noninstitutionalized U.S. population ages 12 and older.[20] 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).[21,22] 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.[23] 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 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 ends in 2009).[24] 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,[25] other sociodemographic differences in heterosexual anal and oral sex,[26] and sexual health risks and formal sex education.[27] 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 contains diagnoses of sexually transmitted diseases related to HIV/AIDS risk behaviors. The procedure for gathering information on these highly sensitive and detailed sexual behaviors is audio computer-assisted self-interviewing (A-CASI). In this procedure, 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. MTF uses self-administered, mailed questionnaires, which should also provide respondents with a high level of privacy. 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.

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.[28] 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.[29,30] YRBS data have been used to examine trends over time in such behaviors,[31,32] as well as how substance use and sexual risk behaviors interrelate.[33,34] The work of MTF complements that of the YRBS by adding 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. In addition, the longitudinal nature of MTF allows an examination of how HIV/AIDS risk behaviors change over time within age groups and within cohorts.

A review of these five 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 the same age group; 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 and, like YRBS and NSDUH, does not gather panel data on its subjects. Further, most of these studies do not duplicate all of the measures of risk and protective behaviors covered in MTF. 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.

RESEARCH DESIGN

As has been illustrated, 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: it is population-based, prospective, cohort-sequential, and has especially rich measures of drug use with which to study how drug use relates directly (through IDU) and indirectly (through engaging in risky sex while high) 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 panels under study here were all drawn from participants in the MTF follow-up surveys of 21- to 30-year-olds in 2004–2008, representing graduates from the classes of 1992 through 2005.

The MTF design has included a representative subsample of each 12th-grade class sample since 1976, with 2,400 cases from each class selected for follow-up. The 2,400 are randomly split into two half samples, one followed up on even numbered years and the other followed on odd numbered years. With this design, it is possible to present data for each class every year while surveying each respondent only every other year, which 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, those 12th graders reporting 20 or more occasions of marijuana use in the prior 30 days (i.e., "daily users") or *any* use of other illicit drugs in the prior 30 days are selected with a higher probability (by a factor of 3.0) than the remaining 12th graders. Differential weighting is then used in all subsequent analyses to compensate for these differential sampling probabilities. Because those in the drug-using stratum receive a weight of .33 in the calculation of all statistics to correct for their overrepresentation in the selection stage, there are more follow-up respondents than are reported in the weighted *N*s given in the tables.

The two half samples from each cohort are followed biennially until they reach age 29 or 30. After that, they are followed at five-year intervals, starting at age 35, currently up to age 50. The present monograph focuses on respondents ages 21 to 30. Future editions will include later ages as the numbers of cases become sufficiently large for meaningful analysis.

Measures

Each 12th-grade sample in recent years has been administered six different questionnaire forms—a procedure adopted in order to cover more material than would have been possible 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, higher educational experiences, and work history. In 2004, new questions covering risk *and* protective behaviors for HIV/AIDS were inserted into two of the questionnaire forms being mailed to people of modal ages 21–30. *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 the respondent had 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. The exact questions measuring these different variables are included in the tables at the end of this monograph.

One reason for limiting the new HIV/AIDS-related questions to two forms 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 form in the 2007 survey, raising the case count by half from what it had been in 2004–2006*.

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 fact that the questionnaires are administered, and the cards are collected, separately by a field representative from the University of Michigan, seems to assure most respondents that their confidentiality has been protected. (The 2,400 selected for follow-up comprise about 15% of the approximately 16,000 seniors surveyed.)

The respondents subsequently selected into the panels are followed by mail—a highly cost-effective mechanism. They receive MTF newsletters each year with address correction cards enclosed, and invitation letters—the first of which comes separately from the questionnaire, while subsequent letters are printed on the front of the questionnaire. Each questionnaire is sent with a check made out to the subject, currently in the amount of $20. Reminder postcards are sent after about two weeks, and callers attempt to contact those who have not responded after a reasonable interval.

Panel Retention

We discuss here 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 of drug use—including MTF—experience attrition, which is often differential with respect to substance use.[35] In addition, survey

*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 was not a systematic difference among them. The results proved highly comparable across forms, which is reassuring for trend estimation based on an increasing number of forms used.

response rates in general have been declining over the past few decades,[36,37] 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 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. One disadvantage of this mode of data collection 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. Certainly 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. Nevertheless, our retention rates compare favorably with those of most longitudinal studies reported in the field, including interview studies.

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 2004 to 2008, the response rate in the first follow-up (corresponding to one to two years past high school) averaged 56%, and for the second through sixth follow-ups (corresponding to 3–12 years past high school) response rates averaged 52% 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 involved, and the substantial length of the questionnaires are taken into account. More importantly, the evidence 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 so that their reweighted 12th-grade distribution on a given drug reproduces 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, this produces prevalence estimates 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, as documented next.

One reason the adjustments are modest is that attrition rates do not differ greatly by levels of 12th-grade substance use; they 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 is somewhat lower among those who had used marijuana once or twice in the last 12 months (75%). This proportion decreases 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 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 or cocaine 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.

The National Survey on Drug Use and Health (NSDUH) seems to provide the best available data against which to validate the estimates generated for adult age groups in MTF, because it is also based on national samples but uses cross-sectional surveys that do not carry the burden of panel attrition. Their results, of course, may be affected by their own nonresponse rates; but that will be true of any comparison survey. The overall response rate for NSDUH in 2006 was 74%. In some earlier analyses, 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. The comparisons that follow are for the age group 19–28 in the MTF panel data, and for 19–28 (or 19–29 for 1999 only) in the NSDUH cross-sectional data. We used the most recent readily available comparable data at that time—2004, but similar results are found in a number of prior years. Other things equal, NSDUH should have higher rates than MTF because it includes school dropouts. Nevertheless, MTF estimates for the 30-day prevalence of marijuana are actually higher (14.4% without poststratification and 16.5% with it) than the NSDUH estimate (14.0%). The same is true for the 12-month cocaine prevalence estimate (6.3% without poststratification and 7.1% with it, vs. 6.3% in the NSDUH estimate). The higher MTF estimates for both marijuana and cocaine suggest that attrition does not produce substantially lower estimates of drug use than would be obtained if response rates were higher.

Even with attrition, substantial proportions of recent drug users remain in the MTF follow-up samples. In recent years, about 15–17% of 19- to 28-year-old respondents reported marijuana use in just the prior 30 days and about 5–7% reported past 12-month use of cocaine. These proportions and the underlying numbers of actual cases are quite adequate for analytic purposes. An important point worth emphasizing here is that in the MTF panel, attrition is not necessarily as great a problem as in a cross-sectional study, because we already know a great deal about each of the follow-up nonrespondents, including their substance use, based on a lengthy questionnaire 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. This has been found to be true in analyses of a variety of other panel data sets, and we have found this to be true in MTF panel analyses.

Limitations

Sample Coverage. Of course, 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 15% or so of each high school class cohort that leaves school before graduation. So, 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). As we have said, panel attrition is a limitation; but techniques have been used here to help compensate for the effects of panel attrition, as will be 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 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, particularly given our procedures for compensating for panel loss.

Validity. Because of the sensitivity of some of these behaviors, one might reasonably ask about 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, re-emphasizing the protections of confidentiality 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 was very small—on the order of about one percentage point for five questions, two percentage points for two questions, and just under three percentage points for one question—suggesting that the great majority of respondents felt willing and able to answer these questions. The question with a 3% decrement asked about 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. Further, females having only female partners likely felt this question was not applicable to them, and they had a considerably higher than average missing data rate on this question. The question on needle sharing had the second highest increment in nonresponse (2.1 percentage points); however, most of that increment (1.2 percentage points) is attributable to respondents who indicated no history of drug injection in the previous question, so simply skipping this question was a logical response for them. Thus the corrected increment in nonresponse for this question was also around one percentage point.

Sample Sizes and Trend Estimation

We have been collecting data on HIV/AIDS-related behaviors for five years, though much of the emphasis here is still on establishing the prevalence and, when available, the frequency of these behaviors in the general population, which we can now do for 2004–2008 combined. Having five years of data is valuable because of the low prevalence rate for some of these 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 these 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 cumulate 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. This is because individuals are surveyed every two years, and therefore, some individuals contribute more than one questionnaire over time. Thus, for estimates using data from 2004 through 2008, a single individual could contribute one, two, or three questionnaires. *The total number of weighted observations for 2004 through 2008 is 10,176, but the total number of unique individuals is 6,333. The weighted Ns reported in each table refer to observations and not individuals.*

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

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 that particular form of poststratification is unworkable. Instead, we have implemented a different poststratification reweighting procedure for the follow-up respondents 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 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.

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 was carried out separately for each of the five years (2004–2008).

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. (A particular advantage to using this procedure is that it takes into account any interactions among the predictor variables, such as an interaction of gender and race.) Secondly, 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.

PREVALENCE/FREQUENCY OF RISK BEHAVIORS AMONG 21- TO 30-YEAR-OLDS

In this section we present and discuss the prevalence and frequency of several HIV/AIDS-related risk behaviors measured among 21- to 30-year-olds in the MTF follow-up surveys of 2004 through 2008 combined*. We begin by presenting data on the combined samples for all respondents (total weighted N = 10,176 observations) and for males and females separately (weighted Ns = 4,787 and 5,389 observations, respectively). (As noted earlier, the number of different individuals is lower.) Results are included for several risk behaviors: injection drug use, having sex with same-gender partners, number of partners, and donating blood. In looking at the gender of the subject's sex partner(s) in the prior 12 months, we distinguish six configurations: males with females, males with males, males with partners of both genders, females with males, females with females, and females with partners of both genders. The case counts turn out to be quite small in the two categories that involve sexual contact with partners of the *same* gender—either for male respondents or female respondents—so the reader is cautioned to pay particular attention to the numbers of observations for these groups.

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.

- Table 10-1 shows that 1.7% of this five-year combined sample reports having *ever* used any drug by injection without medical supervision, and there is a fair-sized gender difference—2.5% of males and 0.9% of females indicate such behavior. The percentages using on 40 or more occasions is 0.4% overall—0.5% for males and 0.3% for females. So a relatively limited segment—about 1 in every 59 respondents—has ever used an illicit drug by injection; a smaller proportion—about 1 in every 250 respondents—reports an extended pattern of use. Of course, even though these appear to be very low prevalence rates, they can still result in significant absolute numbers of users in the population. According to the 2000 Census, there are nearly 40 million Americans ages 21 to 30, so 1% would represent almost 400,000 individuals.

- The proportions 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. The proportions using 40 or more times in the past 12 months are 0.1% overall, 0.2% for males, and 0.1% for females.

*This combining of five years of survey 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.

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 questions about injecting illicit drugs, discussed above, the following question was asked about 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?"

- The proportion who say they have ever shared needles in this way during their lifetime is 0.4% overall—0.5% of males and 0.4% of females (Table 10-1). As noted above, 1.7% of the full samples say they have ever injected a drug, so it follows that about one in four of the injectors shared a needle at some time.

- The proportion 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. This compares to 0.5% who say that they have injected a drug in the prior 12 months, so here again only a minority of these 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 are not large.

- In sum, needle-sharing behavior appears to have a very low prevalence among high school graduates ages 21 to 30. Again, it seems likely that this is an underestimate for the entire population in this age range 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 that there may be some underreporting of this behavior. Nevertheless, it appears that this is a low-prevalence behavior for the age group.

Sex with Multiple Partners

Having sexual relations with multiple partners is another class of behaviors that increases the risk of HIV transmission. The question on this behavior was, "During the last 12 months, how many sex partners have you had? (This includes vaginal, oral, or anal sex.)" We believed that, for clarity, the nature of the sexual encounters to be included in the answers had to be specified; we included these three types of sexual activity because all can involve the transmission of HIV. Results are provided in Table 10-2.

- About one seventh (14%) of 21- to 30-year-old respondents reported not having any sex partners during the prior 12 months—15% of males and 13% of females.

- The most common answer by far to this question was having just one partner during the year (62% overall), with a lower proportion of males (57%) than females (66%) giving this answer.

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

- While having even one sex partner is not without risk, the risk rises rapidly with an increased number of partners. One in ten reported that they had a total of two partners during the year (9.3% of males and 10.0% of females); 5.8% reported three partners (6.5% of males and 5.2% of females); leaving about one in eleven (8.8%) reporting having four or more partners (11.7% of males and 6.4% of females). Very few report having more than 20 partners (0.2% of males and 0.1% of females).

- In addition to being more likely to inject drugs and share needles, males are also more likely to have had multiple sex partners, and males are particularly more likely to have had four or more partners.

Sex with Partners of the Same Gender

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. Only people reporting that they have had sexual contact with one or more partners in the prior year are 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 Table 10-2 for the results.

- Of the respondents having one or more sex partners in the prior 12 months, 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.

- That leaves 5.2% of males indicating 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 211 observations from male respondents who reported having any sexual contact with other males—173 reported having sex exclusively with other males, and 38 reported having sex with both genders. [The corresponding weighted numbers of *different individuals* are 127, 99, and 28.] For data on the numbers of sex partners each of these groups reported, see Table 10-2.)

- Among females, 3.8% reported having any female sex partners—2.0% of all female observations indicated partners that were exclusively female and 1.8% indicated that their partners were of both genders.

  (Again, note that the numbers of observations available for study are limited: 177 reports of having any sexual contact with other females, 95 reports of having sex with other females exclusively, and 83 reports of having sex with both female and male partners. The corresponding weighted numbers of different individuals are 120, 61, and 59.)

- Once more, males are at greater risk than females (a) because males are more likely to engage in same-gender sexual activity, and (b) because those encounters almost certainly

carry a greater likelihood of HIV transmission than female same-gender sexual encounters.

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 does present the possibility of *transmitting* HIV if the donor is infected*. The question of relevance here is to what extent is blood donated by young adults who are at higher than average risk of carrying HIV? We begin with the overall prevalence of blood donation shown in Table 10-3.

- The proportion of respondents saying that they have donated blood or blood plasma during their lifetime is 45% overall, with similar proportions for males and females (Table 10-3).

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

*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 12 to 16 days before donating blood, the infection might not be detected in the screening tests (http://www.wcredcross.org/bloodmobile/qa_aids.html). Further, the data presented here suggest that at least one high-risk group that is not supposed to donate blood has been doing so.

INTERSECTION OF RISK BEHAVIORS

One goal of MTF is to determine to what extent these various risk behaviors overlap one another, and to determine what proportion of the population is at heightened risk of HIV transmission as a result. We next report several pairwise combinations of risk factors.

Needle Sharing among Those with Same-Gender Partners

Needle sharing and sex with same-gender partners (particularly for males) are known to be among the most important vectors for the spread of HIV.

- Table 10-4 provides information on injection drug use and needle sharing by the six categories of gender of partners. 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. However, it does appear that 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.

- Males who report having exclusively male partners have about the same lifetime prevalence of injection as males having exclusively female partners, but they have a slightly higher prevalence of injecting a drug the prior 12 months (1.2% vs. 0.7%, respectively). They also have a higher lifetime and 12-month prevalence of needle sharing. So, there is some compounding of these two types of risk among males.

- Among females, the lifetime prevalence of injecting drugs is higher among those having exclusively female partners (3.2% vs. 0.8%) and, more importantly, the lifetime prevalence of needle sharing is also higher (3.3% vs. 0.3%). Interestingly, there is virtually no 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.

Needle Sharing by Number of Partners

- The likelihood of injecting drugs either in one's lifetime or in the prior 12 months rises considerably with the number of partners reported in the prior 12 months, as does the likelihood of sharing a needle (Table 10-5). For example, those who report two partners or less report a prevalence of needle sharing in the prior 12 months of 0.1% or less, whereas those reporting five or more partners have a prevalence of 1.4%. The association holds for both males and females. This means that needle sharers, who are at particular risk of having HIV, are more likely than others to be exposing a large number of partners to that risk.

Number of Partners among Those with Same-Gender Partners

- We examined the number of partners reported as a function of the genders of those partners (Table 10-6). For sexually active males who had sex exclusively with other males during the year (*N* = 173 observations), about half (54%) reported that they had only one sex partner. (This compares with a single partner rate of 69% among the males who reported that they had sexual contact exclusively with females.) About a fifth (18%) 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 at considerable risk by having multiple sex partners, and this is especially true for males who have had sex with other males during the year.

- Among sexually active females who had sex exclusively with other females during the year (*N* = 95), 80% reported having only one partner, indicating a high level of monogamy in this group. (This rate is very close to the 77% who reported being monogamous among females who had male partners exclusively.) Again, these estimates are only suggestive given the very limited sample size involved.

- 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; weighted *N*s = 83 observations for females and 38 for males reporting relations with partners of both genders in the prior 12 months. The small numbers clearly render the results only tentative and suggestive. Nevertheless, based on the 121 cases who report partners of both genders, the proportion reporting five or more partners appears to be quite high. (See Table 10-6.)

Donating Blood by Needle Sharing

- There is an inadequate sample size to examine the intersection between needle sharing and blood donation because the numbers of respondents indicating shared needle use, either in their lifetime or in the past 12 months, were too small (*N*s = 47 and 14, respectively). In the future, by concatenating across years, we may be able to examine this intersection.

Donating Blood by Those with Same-Gender Partners

- About equal proportions of males who reported any male sex partner(s) during the previous 12 months (46% based on 160 weighted observations) and males who reported only female sex partners (47%) said they had *ever* donated blood (Table 10-7). Slightly fewer of the men reporting any male sex partners said they donated blood *in the prior 12 months* (10%, versus 12% among males reporting only female partners), a statistically nonsignificant difference. *Whether or not the difference is real, 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.* Rather, their rate of blood donation appears very similar to the rate for all males.

- Females who have exclusively male partners have higher reported prevalence of donating blood than do females whose partners include other females.

Donating Blood by Number of Partners

- The results in Table 10-8 show little systematic association between the number of 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.

PREVALENCE OF PROTECTIVE BEHAVIORS

People can take various precautions to diminish their likelihood of contracting HIV and/or transmitting it to others. One, of course, is simply to avoid the high-risk behaviors already discussed, and to avoid donating blood if one is a male with a history of having male sex partners. 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. Blood donation has already been discussed; answers to the questions about condom use and HIV testing are discussed next.

Condom Use

Respondents who indicated that they had one or more sexual partners during the prior 12 months were 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 were: never, seldom, sometimes, most times, and always. Both genders responded to this question. (Respondents who reported no sex partners in the prior 12 months are excluded from the data presented here.)

- The majority (55%) of sexually active young adult respondents said that they "seldom" or "never" used condoms during the year—with 50% of males and 59% of females giving one of these answers (see Table 10-9). Indeed, a large proportion (41%) indicated that they did not use condoms at all during the prior 12 months—36% of the sexually active males and 46% 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 said that they used a condom "most times" or "always"—37% of males and 29% of females.

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 may be found in Table 10-10.

- 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—37% of males and 50% of females.

- About one fifth (21%) say they have been tested in the *prior 12 months*—17% of males and 24% of females.

- Not all of those who took HIV tests, however, actually received their results. Asked if they received the results of their *most recent* HIV test, 7.5% of those who had ever been tested said that they had not—8.9% of males and 6.6% of females tested. 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.

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 no (Table 10-11). Of those who say they "always" use condoms, slightly fewer (18%) indicate getting tested for HIV in the prior 12 months, compared to 26–28% of those who say they seldom, sometimes, or most times use condoms. Perhaps those who always use condoms consider themselves to be at less risk of having contracted HIV, and they are, of course. 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.

INTERSECTION OF RISK AND PROTECTIVE BEHAVIORS

Frequency of Condom Use by Number of Partners

- Only about one third (33%) of sexually active young adults said that they used a condom "most times" or "always"—37% of males and 29% of females (Table 10-9). This statistic rises considerably with the number of partners (Table 10-12).

- As might be expected, many of those not using condoms are respondents who had only one partner during the year. Among those reporting only one partner (the majority of all respondents), 52% 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%), by about half again among those reporting three or four partners (to 13%), and still further among those reporting five or more partners (10%).

- In sum, using condoms to prevent exposure to—and transmission of—HIV (and many other sexually transmitted diseases) is considerably more prevalent among those who are at heightened risk due to the number of sexual partners that they have. That is the encouraging part of this finding, but even 56% using "most times" or "always" is far short of 100% using "always," which is the ideal condition from a public health point of view.

Frequency of Condom Use by Gender of Partners

- There have been considerable efforts made in past years to encourage the use of condoms by men who have sexual relations with men, with the obvious intent being to stem the spread of HIV/AIDS in that population. While the numbers of such cases available here for analysis are quite limited (weighted $N = 210$), results suggest that the use of condoms in this population is probably higher than in the population of men reporting sex exclusively with women in the prior year—35% reporting never (versus 36% in the latter group), but 42% reporting "most times" or "always" (versus 37% in the latter group) . 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 and also by those who feel that they are in a monogamous relationship and therefore less likely to be exposed to HIV (Table 10-13).

Getting Tested for HIV by Gender of Partners

- Because males having sexual contact with male partners are at heightened risk for contracting and/or transmitting HIV, we looked to see if HIV testing was more prevalent among them (Table 10-14). While the number of cases is small (again, 210 weighted cases), the results are suggestive of increased vigilance in this population. Nearly two thirds (64%) of males having exclusively male partners in the prior year indicated being tested for HIV at some time, and nearly four in every ten (38%) said that they had been tested in just the past year. These rates compare to 40% and 18%, respectively, among males who have had female partners exclusively during the past year. Hardly any (2.4%)

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 8.3% of those who had only female partners.

Getting Tested for HIV by Number of Partners

- The prevalence of getting tested for HIV rises with the number of partners reported in the prior 12 months (Table 10-15). While only 7% 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, 31% for those reporting two partners, and up to 35% for those reporting five or more partners.

- The proportion getting the results of their tests is high in all groups, but it does rise with the number of partners reported.

- It thus appears that those 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.

This has been a reporting 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. We believe there is also considerable value in tracking *change* in the prevalence of these risk and protective behaviors among young adults. While the numbers are still small, especially for estimating the intersection of some of the most rare behaviors like needle sharing and having same-gender sex partners, ongoing data collections should allow us to monitor these behaviors and provide more in-depth consideration of important subgroups and correlates. Adding these questions to additional questionnaire forms has facilitated those efforts.

TRENDS IN THE PREVALENCE AND FREQUENCY OF RISK BEHAVIORS

The 2008 MTF data collection is the fifth to include this set of questions on HIV risk and protective behaviors. We have chosen to present the trend data in the form of 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 the results for the year labeled at the top of each column and the results from the prior year. The 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.

As can be seen in Tables 10-16 through 10-18 and Figures 10-1 and 10-2, there has been very little movement over the four years for which estimates have been calculated in ***any of the risk behaviors*** under study. Indeed, there is a very high level of replication of the results, which serves as evidence of the reliability of these estimates.

Table 10-16 and Figure 10-1 show no systematic change over the interval 2005–2008 among 21- to 30-year-olds in the prevalence of frequency of lifetime or past-year ***drug injection rates*** or ***needle sharing***.

Table 10-17 and Figure 10-2 show no systematic change over the same interval (2005–2008) in the ***number of sex partners*** that respondents report having in the prior year, and the differences by year in the prevalence of having more than one partner are far from statistically significant.

The proportions of respondents reporting sex with ***partners of the same gender*** during the prior year also showed no systematic change, nor did the rate of ***blood donation*** (Tables 10-17 and 10-18, and Figure 10-2).

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 shown very little change in the 2005–2008 interval. While there may be some very slight rise in the reported prevalence of ***condom use*** (Table 10-18 and Figure 10-3), it is not statistically significant. There has been no systematic change in the lifetime or annual prevalence of respondents ***getting tested for HIV/AIDS***, nor in the rate that those tested have ***secured the test results*** (Table 10-17 and Figure 10-3).

It thus appears that movement in both the risk and protective behaviors related to the spread of HIV in the young adult population is going to be gradual. The high degree of replication of these findings across sequential national surveys gives considerable evidence of the reliability of these measures in a national population.

CONCLUSION

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 these 21- to 30-year-old respondents 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 sex with a male partner in the prior 12 months, with the majority (4.3%) reporting having had only male partners.

Men reporting sex with men are considerably more likely to have multiple partners than men reporting sex with only female partners, thus compounding their risk. While this very high-risk group uses condoms slightly more frequently than men who have sex exclusively with women, the differences are small and not statistically significant—42% say they use condoms "most times" or "always" versus 37% in the latter group. Condom use rises considerably with having multiple sex partners. The higher the number of partners reported, the higher the rate of condom use; and this holds true for both genders.

Some 38% 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 18% of men who report having sex exclusively with women. (The former group is 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 35% 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 try to do something about it, even if it is simply to determine whether they are already infected. Interestingly, condom use and HIV testing—two risk reduction behaviors—do not seem to correlate with each other, as might have been expected.

Men who have had sex with men are not supposed to donate blood, lest they potentially put others at risk; but the evidence here is that relatively few are deterred from doing so. Some 43% 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 9% indicate donating in just the past year (vs. 12%). Also, respondents reporting high numbers of sex partners donate blood in similar proportions as those reporting few partners. Thus it seems that blood banks have not been entirely successful at screening out high-risk donors, despite their attempts to do so.

"Only" about 0.4% of 21- to 30-year-old respondents surveyed in 2004–2008 (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 a particularly high-risk group, and we believe it likely that our estimates of the size of this group are low.

Findings reported here are based on the five 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 reach statistical significance—particularly when some of the most rare behaviors are involved. But the data are highly suggestive and tend to replicate, 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 five-year interval suggests that little change is taking place. In other words, there is little evidence of progress being made during this period. 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 about risks that earlier cohorts possessed, which 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.

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TABLE 1

Injection Drug Use and Needle Sharing, Lifetime and Last 12 Months: Total and by Gender among Respondents of Modal Ages 21–30 in 2004–2008[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	98.3	97.5	99.1
1–2	0.5	0.7	0.4
3–5	0.2	0.4	0.1
6–9	0.2	0.3	*
10–19	0.2	0.4	0.1
20–39	0.2	0.3	*
40+ Occasions	0.4	0.5	0.3
Weighted N =	*10,174*	*4,786*	*5,388*
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	0.2	0.1
3–5	*	*	*
6–9	0.1	0.2	*
10–19	0.1	0.1	*
20–39	0.1	0.1	*
40+ Occasions	0.1	0.2	0.1
Weighted N =	*10,176*	*4,787*	*5,389*
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 =	*10,076*	*4,740*	*5,337*

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

"*" 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 2

Number of Partners and Gender of Partners: Total and by Gender among Respondents of Modal Ages 21–30 in 2004–2008[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	13.9	15.3	12.7
One	61.7	57.1	65.7
Two	9.7	9.3	10.0
Three	5.8	6.5	5.2
Four	3.7	4.3	3.3
5–10	4.0	5.5	2.7
11–20	0.8	1.3	0.3
21–100	0.2	0.4	0.1
More than 100	0.1	0.2	0.1
Weighted N =	*10,142*	*4,773*	*5,370*
Gender of Partners in Last 12 Months[b]			
During the LAST 12 MONTHS, have your sex partner or partners been …			
Exclusively male?	53.6	4.3	96.2
Both male and female?	1.4	0.9	1.8
Exclusively female?	45.0	94.8	2.0
Weighted N =	*8,721*	*4,042*	*4,680*

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

"*" 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 3

Blood Donation, Lifetime and Last 12 Months: Total and by Gender among Respondents of Modal Ages 21–30 in 2004–2008[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	10.5	11.5	9.5
Yes, but not in the last 12 months	34.5	34.2	34.7
No, never	55.1	54.3	55.7
Weighted N =	*10,227*	*4,815*	*5,412*

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 4

Injection Drug Use and Needle Sharing, Lifetime and Last 12 Months by Gender of Partners in Last 12 Months among Respondents of Modal Ages 21–30 in 2004–2008[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	97.3	97.5	85.4	99.2	96.8	92.4
1–2	0.7	1.1	1.5	0.4	0.3	2.8
3–5	0.4	0.2	*	0.1	2.6	0.3
6–9	0.2	0.3	6.4	*	*	1.0
10–19	0.5	*	*	0.1	*	0.4
20–39	0.3	*	3.1	0.1	*	*
40+ Occasions	0.4	0.8	3.6	0.3	0.3	2.9
Weighted N =	*3,817*	*173*	*37*	*4,493*	*94*	*83*
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	99.3	98.8	86.4	99.8	100.0	96.0
1–2	0.2	0.3	1.5	*	*	1.9
3–5	*	*	*	*	*	*
6–9	0.2	*	6.4	*	*	*
10–19	0.1	*	3.1	*	*	0.4
20–39	0.1	*	2.6	*	*	*
40+ Occasions	0.1	0.8	*	0.1	*	1.8
Weighted N =	*3,818*	*173*	*37*	*4,494*	*94*	*83*
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	0.8	2.6	0.1	*	2.2
Yes, but not in the last 12 months	0.2	0.6	2.8	0.3	3.3	1.3
No, never	99.6	98.6	94.6	99.7	96.7	96.5
Weighted N =	*3,783*	*173*	*37*	*4,452*	*95*	*81*

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

"*" 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 5

Injection Drug Use and Needle Sharing by Number of Partners, Lifetime and Last 12 Months: Total and by Gender among Respondents of Modal Ages 21–30 in 2004–2008[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		99.2	98.6	98.2	97.2	94.5
1+ Occasions		0.8	1.4	1.8	2.8	5.5
	Weighted N =	*1,407*	*6,239*	*981*	*967*	*520*
Males						
0 Occasions		98.8	97.8	97.5	96.2	93.5
1+ Occasions		1.2	2.2	2.5	3.8	6.5
	Weighted N =	*727*	*2,718*	*446*	*511*	*353*
Females						
0 Occasions		99.7	99.2	98.8	98.3	96.7
1+ Occasions		0.3	0.8	1.2	1.7	3.3
	Weighted N =	*679*	*3,521*	*535*	*456*	*167*
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	99.6	99.0	96.6
1+ Occasions		0.4	0.2	0.4	1.0	3.4
	Weighted N =	*1,408*	*6,241*	*981*	*966*	*520*
Males						
0 Occasions		99.6	99.6	99.6	98.4	96.2
1+ Occasions		0.4	0.4	0.4	1.6	3.8
	Weighted N =	*728*	*2,719*	*446*	*510*	*353*
Females						
0 Occasions		99.7	99.9	99.7	99.6	97.6
1+ Occasions		0.3	0.1	0.3	0.4	2.4
	Weighted N =	*679*	*3,522*	*535*	*456*	*167*
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	0.3	1.4
Yes, but not in the last 12 months		0.4	0.3	0.5	0.4	0.2
No, never		99.5	99.7	99.4	99.4	98.4
	Weighted N =	*1386*	*6187*	*969*	*958*	*516*
Males						
Yes, in the last 12 months		0.1	0.1	*	0.3	1.3
Yes, but not in the last 12 months		0.8	0.2	0.5	0.4	0.1
No, never		99.1	99.7	99.5	99.3	98.6
	Weighted N =	*716*	*2,698*	*438*	*507*	*350*
Females						
Yes, in the last 12 months		*	*	0.2	0.2	1.6
Yes, but not in the last 12 months		*	0.3	0.5	0.3	0.5
No, never		100.0	99.7	99.3	99.5	98.0
	Weighted N =	*671*	*3,490*	*530*	*452*	*166*

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

"*" 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 6

Number of Partners by Gender of Respondents and Partners in Last 12 Months among Respondents of Modal Ages 21–30 in 2004–2008[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	68.6	53.7	10.6	76.5	80.0	7.1
Two	11.0	9.9	21.9	11.2	10.1	24.0
Three	7.5	10.5	7.9	5.7	4.0	24.0
Four	4.9	8.2	15.7	3.5	4.0	16.5
5–10	6.2	9.3	32.4	2.7	1.9	22.2
11–20	1.3	4.8	9.0	0.3	*	3.8
21 or more partners	0.6	3.7	2.5	0.1	*	2.4
Weighted N =	*3,813*	*173*	*38*	*4,494*	*95*	*83*

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

"—" 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 7

Blood Donation by Gender of Respondents and Partners, Lifetime and Last 12 Months among Respondents of Modal Ages 21–30 in 2004–2008[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	11.6	8.8	11.2	9.7	5.4	5.6
Yes, but not in the last 12 months	35.5	31.1	48.2	35.5	39.4	44.2
No, never	52.9	60.1	40.6	54.8	55.2	50.2
Weighted N =	*3,820*	*173*	*38*	*4,488*	*95*	*83*

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 8

Blood Donation, Lifetime and Last 12 Months by Number of Partners in Last 12 Months among Respondents of Modal Ages 21–30 in 2004–2008[a] Combined

(Entries are percentages.)

	Number of Partners in Last 12 Months				
	None	One	Two	Three or Four	Five or More
Blood Donation: Lifetime and Last 12 Months					
Have you ever donated blood or blood plasma?					
Yes, in the last 12 months	11.0	10.2	12.0	10.4	10.7
Yes, but not in the last 12 months	28.2	36.3	29.8	37.2	35.7
No, never	60.8	53.6	58.2	52.4	53.6
Weighted N =	*1,404*	*6,240*	*978*	*968*	*520*

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 9

Frequency of Condom Use in Last 12 Months: Total and by Gender among Respondents of Modal Ages 21–30 in 2004–2008[a] Combined

(Entries are percentages.)

	Total	Male	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	41.1	36.1	45.5
Seldom	13.5	13.7	13.3
Sometimes	12.8	13.0	12.7
Most times	15.2	16.8	13.8
Always	17.3	20.4	14.7
Weighted N =	*8,653*	*4,019*	*4,634*

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

"*" 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 10

Test for HIV/Receive HIV Test Results: Total and by Gender among Respondents of Modal Ages 21–30 in 2004–2008[a] Combined

(Entries are percentages.)

	Total	Male	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	20.5	16.5	24.0
Yes, but not in the last 12 months	23.4	20.9	25.6
No, never	56.1	62.6	50.4
Weighted N =	*10,227*	*4,815*	*5,412*
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	92.5	91.1	93.4
No	7.5	8.9	6.6
Weighted N =	*4,444*	*1,789*	*2,654*

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 11

Test for HIV/Receive HIV Test Results by Frequency of Condom Use among Respondents of Modal Ages 21–30 in 2004–2008[a] Combined

(Entries are percentages.)

	Condom Use in Last 12 Months[b]				
	Never	Seldom	Sometimes	Most Times	Always
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	21.1	26.4	28.4	26.4	17.9
Yes, but not in the last 12 months	30.1	24.4	22.8	23.6	18.5
No, never	48.8	49.3	48.8	50.0	63.6
Weighted N =	*3,555*	*1,165*	*1,108*	*1,312*	*1,494*
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	92.8	91.8	93.5	94.2	92.9
No	7.2	8.2	6.5	5.8	7.1
Weighted N =	*1,796*	*587*	*563*	*652*	*541*

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 12

Frequency of Condom Use by Number of Partners in Last 12 Months: Total and by Gender among Respondents of Modal Ages 21–30 in 2004–2008[a] Combined

(Entries are percentages.)

	Number of Partners in Last 12 Months				
	None	One	Two	Three or Four	Five or More
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					
Never	—	51.6	19.9	12.7	10.1
Seldom	—	12.6	16.5	16.3	14.0
Sometimes	—	10.5	18.1	18.8	19.6
Most times	—	9.3	22.9	32.7	38.6
Always	—	16.0	22.7	19.6	17.7
Weighted N =	—	*6,173*	*971*	*963*	*521*
Males					
Never	—	47.2	18.7	11.7	9.2
Seldom	—	13.3	14.5	16.4	11.8
Sometimes	—	10.8	14.9	18.0	19.6
Most times	—	10.1	24.2	30.9	38.2
Always	—	18.5	27.7	22.9	21.2
Weighted N =	—	*2,694*	*444*	*511*	*354*
Females					
Never	—	55.0	21.0	13.7	12.0
Seldom	—	12.0	18.1	16.1	18.6
Sometimes	—	10.2	20.8	19.6	19.6
Most times	—	8.7	21.7	34.7	39.6
Always	—	14.2	18.4	15.9	10.2
Weighted N =	—	*3,479*	*527*	*452*	*167*

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

"—" 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 13

Frequency of Condom Use by Gender of Respondents and Partners in Last 12 Months among Respondents of Modal Ages 21–30 in 2004–2008[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	36.2	39.4	17.1	45.2	80.3	27.6
Seldom	13.8	9.4	15.5	13.4	6.8	11.0
Sometimes	13.0	11.5	16.5	12.8	4.4	16.6
Most times	16.5	17.2	41.9	13.8	3.9	24.8
Always	20.4	22.5	9.0	14.8	4.6	20.0
Weighted N =	*3,798*	*172*	*38*	*4,456*	*87*	*82*

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 14

Test for HIV/Received HIV Test Results by Gender of Respondents and Partners among Respondents of Modal Ages 21–30 in 2004–2008[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	17.5	37.6	27.9	26.5	18.9	37.6
Yes, but not in the last 12 months	22.4	26.8	18.5	27.5	29.5	32.0
No, never	60.1	35.6	53.6	46.0	51.7	30.4
Weighted N =	*3,821*	*172*	*38*	*4,493*	*95*	*83*
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	91.7	97.6	65.6	93.7	87.1	93.6
No	8.3	2.4	34.4	6.3	12.9	6.4
Weighted N =	*1,519*	*110*	*16*	*2,399*	*46*	*56*

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 15

Test for HIV/Received HIV Test Results, Lifetime and Last 12 Months by Number of Partners among Respondents of Modal Ages 21–30 in 2004–2008[a] Combined

(Entries are percentages.)

	Number of Partners in Last 12 Months				
	None	One	Two	Three or Four	Five or More
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	6.5	19.2	30.7	31.8	34.9
Yes, but not in the last 12 months	11.9	26.9	21.6	21.3	19.5
No, never	81.7	53.8	47.7	46.9	45.6
Weighted N =	*1,397*	*6,240*	*977*	*970*	*522*
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	86.3	93.0	91.8	91.5	97.0
No	13.7	7.0	8.2	8.5	3.0
Weighted N =	*249*	*2,856*	*506*	*513*	*281*

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 16

Trends[a] in Injection Drug Use and Needle Sharing, Lifetime and Last 12 Months: Total and by Gender among Respondents of Modal Ages 21–30

(Entries are percentages.)

	Total					Male					Female				
	2004	2005	2006	2007	2008	2004	2005	2006	2007	2008	2004	2005	2006	2007	2008
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	—	98.5	98.5	98.3	98.2	—	97.9	97.7	97.4	97.3	—	99.1	99.2	99.0	99.1
1–2	—	0.5	0.5	0.6	0.5	—	0.6	0.6	0.7	0.7	—	0.3	0.5	0.5	0.3
3–5	—	0.2	0.2	0.3	0.3	—	0.2	0.3	0.5	0.5	—	0.2	0.1	0.1	0.1
6–9	—	0.1	0.2	0.2	0.2	—	0.1	0.3	0.4	0.3	—	*	*	*	*
10–19	—	0.3	0.2	0.2	0.2	—	0.5	0.4	0.4	0.4	—	*	*	0.1	0.1
20–39	—	0.1	0.1	0.1	0.2	—	0.2	0.2	0.3	0.4	—	*	*	*	0.1
40+ Occasions	—	0.4	0.3	0.3	0.4	—	0.5	0.5	0.4	0.4	—	0.3	0.2	0.2	0.4
Weighted N =	—	*3,643*	*3,441*	*4,076*	*4,856*	—	*1,727*	*1,615*	*1,904*	*2,282*	—	*1,916*	*1,826*	*2,172*	*2,574*
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	—	99.2	99.3	99.2	99.3	—	99.7	99.9	99.8	99.7
1–2	—	0.1	0.1	0.1	0.1	—	0.2	0.2	0.2	0.1	—	0.1	*	0.1	0.1
3–5	—	*	0.1	*	*	—	*	0.1	0.1	*	—	*	*	*	*
6–9	—	*	0.1	0.1	0.2	—	*	0.1	0.2	0.3	—	*	*	*	*
10–19	—	0.1	0.1	0.1	0.1	—	0.2	0.2	0.1	0.1	—	*	*	*	*
20–39	—	*	*	*	0.1	—	0.1	*	*	0.1	—	*	*	*	0.1
40+ Occasions	—	0.2	0.1	0.1	0.1	—	0.2	0.1	0.1	0.1	—	0.2	0.1	*	0.1
Weighted N =	—	*3,644*	*3,441*	*4,077*	*4,857*	—	*1,727*	*1,615*	*1,905*	*2,282*	—	*1,917*	*1,826*	*2,172*	*2,575*
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	—	0.1	0.2	0.2	0.1	—	0.1	0.1	0.1	0.2
Yes, but not in the last 12 months	—	0.3	0.4	0.4	0.4	—	0.3	0.4	0.3	0.4	—	0.3	0.3	0.4	0.3
No, never	—	99.7	99.5	99.5	99.5	—	99.6	99.4	99.4	99.5	—	99.7	99.6	99.6	99.5
Weighted N =	—	*3,610*	*3,387*	*4,032*	*4,823*	—	*1,708*	*1,582*	*1,888*	*2,271*	—	*1,902*	*1,805*	*2,144*	*2,552*

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

"*" 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; the 2006 data is 2005 and 2006 combined; 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. The 2008 data is 2007 and 2008 combined.

TABLE 17

Trends[a] in Number of Partners, Gender of Partners, Test for HIV, and Received HIV Test Results: Total and by Gender among Respondents of Modal Ages 21–30

(Entries are percentages.)

	Total					Male					Female				
	2004	2005	2006	2007	2008	2004	2005	2006	2007	2008	2004	2005	2006	2007	2008
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	—	14.5	14.6	13.7	13.5	—	16.9	16.6	14.7	14.3	—	12.3	12.8	12.7	12.8
One	—	61.2	61.5	61.9	62.2	—	56.3	56.2	57.0	58.6	—	65.6	66.1	66.2	65.3
Two	—	10.1	9.3	9.5	9.4	—	10.1	8.7	8.9	8.8	—	10.2	9.8	10.1	10.0
Three	—	5.9	6.2	5.8	5.9	—	6.1	7.5	7.2	6.4	—	5.6	5.1	4.5	5.4
Four	—	3.2	3.4	4.0	4.1	—	3.5	4.3	4.8	4.4	—	2.9	2.6	3.3	3.7
5–10	—	3.9	4.1	4.2	4.0	—	5.2	5.3	5.8	5.5	—	2.7	3.0	2.8	2.6
11–20	—	0.9	0.7	0.6	0.7	—	1.5	0.9	0.9	1.3	—	0.4	0.5	0.4	0.2
21–100	—	0.2	0.2	0.2	0.3	—	0.4	0.4	0.5	0.5	—	0.1	*	*	0.1
More than 100	—	0.1	0.2	0.1	0.1	—	0.1	0.2	0.1	0.2	—	0.1	0.1	*	*
Weighted N =	—	*3,628*	*3,432*	*4,066*	*4,844*	—	*1,720*	*1,611*	*1,902*	*2,276*	—	*1,908*	*1,821*	*2,163*	*2,568*
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	—	3.9	4.3	4.6	4.1	—	95.8	96.0	96.3	96.4
Both male and female?	—	1.5	1.4	1.4	1.3	—	1.0	0.8	1.0	0.9	—	1.9	1.9	1.7	1.7
Exclusively female?	—	45.1	44.6	44.6	45.3	—	95.0	94.9	94.4	95.0	—	2.3	2.1	2.0	1.9
Weighted N =	—	*3,103*	*2,935*	*3,504*	*4,180*	—	*1,432*	*1,344*	*1,616*	*1,950*	—	*1,672*	*1,590*	*1,888*	*2,230*
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	—	20.4	19.6	20.1	20.9	—	16.7	16.0	16.0	16.4	—	23.7	22.9	23.8	24.9
Yes, but not in the last 12	—	24.0	23.9	23.5	22.9	—	21.2	20.8	21.2	20.7	—	26.5	26.6	25.5	24.8
No, never	—	55.7	56.5	56.4	56.2	—	62.2	63.2	62.8	62.9	—	49.8	50.6	50.7	50.3
Weighted N =	—	*3,664*	*3,459*	*4,098*	*4,882*	—	*1,738*	*1,629*	*1,919*	*2,293*	—	*1,927*	*1,830*	*2,179*	*2,589*
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	—	89.8	91.2	92.2	92.0	—	93.9	93.8	92.7	93.2
No	—	7.8	7.2	7.5	7.3	—	10.2	8.8	7.8	8.0	—	6.1	6.2	7.3	6.8
Weighted N =	—	*1,610*	*1,486*	*1,764*	*2,113*	—	*655*	*591*	*701*	*842*	—	*955*	*895*	*1,063*	*1,271*

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

"*" 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; the 2006 data is 2005 and 2006 combined; 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. The 2008 data is 2007 and 2008 combined.

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

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

TABLE 18

Trends[a] in Blood Donation and Frequency of Condom Use: Total and by Gender among Respondents of Modal Ages 21–30

(Entries are percentages.)

	Total					Male					Female				
	2004	2005	2006	2007	2008	2004	2005	2006	2007	2008	2004	2005	2006	2007	2008
Blood Donation: Lifetime and Last 12 Months															
Have you ever donated blood or blood plasma?															
Yes, in the last 12 months	—	10.9	11.3	10.5	10.0	—	11.9	12.5	11.8	11.0	—	10.1	10.2	9.3	9.1
Yes, but not in the last 12 months	—	33.8	33.2	34.2	35.6	—	33.6	32.2	33.1	35.7	—	33.9	34.1	35.2	35.6
No, never	—	55.3	55.6	55.3	54.4	—	54.5	55.4	55.1	53.3	—	56.0	55.7	55.5	55.3
Weighted N =	—	*3,669*	*3,463*	*4,096*	*4,876*	—	*1,744*	*1,629*	*1,917*	*2,289*	—	*1,926*	*1,833*	*2,179*	*2,587*
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	—	42.1	41.6	40.5	40.7	—	37.0	36.4	35.8	36.0	—	46.5	46.1	44.4	44.8
Seldom	—	13.7	13.2	13.6	13.2	—	13.7	12.8	13.3	13.8	—	13.7	13.5	13.7	12.6
Sometimes	—	12.4	13.3	13.5	13.0	—	12.8	13.0	13.3	13.2	—	12.0	13.5	13.7	12.8
Most times	—	15.5	15.2	15.2	14.9	—	17.8	18.0	16.8	15.7	—	13.5	12.9	13.9	14.3
Always	—	16.4	16.7	17.2	18.3	—	18.8	19.9	20.7	21.3	—	14.3	14.0	14.3	15.6
Weighted N =	—	*3,076*	*2,905*	*3,476*	*4,160*	—	*1,423*	*1,330*	*1,607*	*1,946*	—	*1,653*	*1,574*	*1,869*	*2,214*

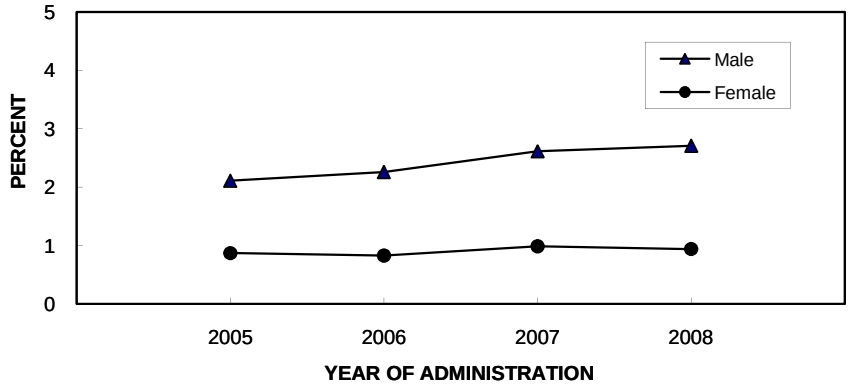
Source. The Monitoring the Future study, the University of Michigan.

[a]Data presented in this table are two-year moving averages. The 2005 data is 2004 and 2005 combined; the 2006 data is 2005 and 2006 combined; 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. The 2008 data is 2007 and 2008 combined.

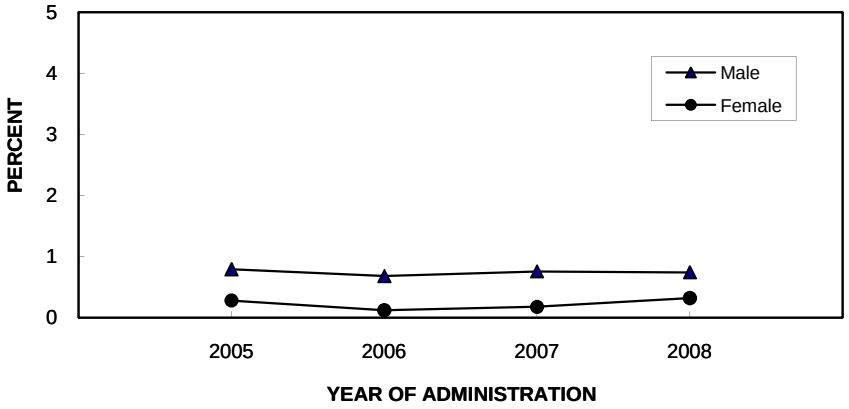
[b]Percentages based on those reporting sex with one or more partners during the last 12 months. Those reporting no partners are omitted.

Figure 1

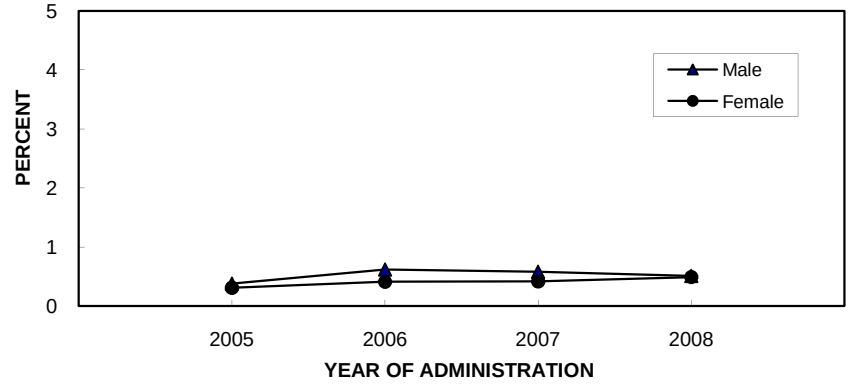
Trends* in Lifetime Injection Drug Use by Gender



Trends* in Annual Injection Drug Use by Gender



Trends* in Lifetime Needle Sharing by Gender

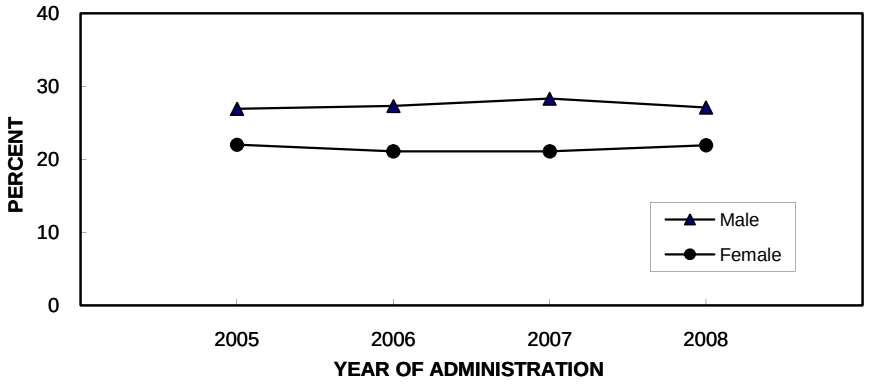


Source. The Monitoring the Future study, the University of Michigan.

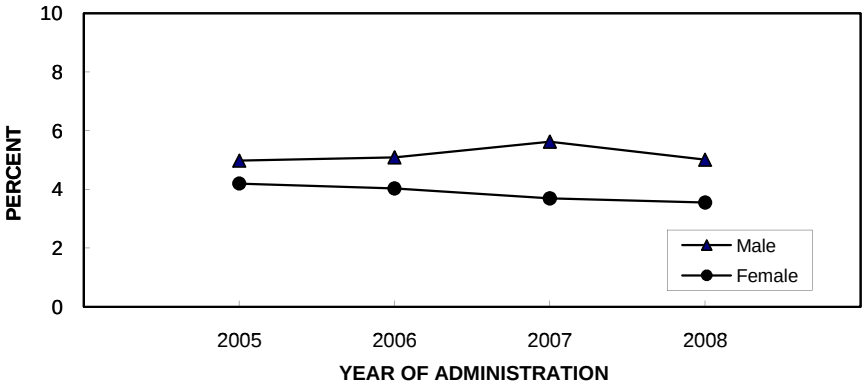
*Each point plotted here is the mean of the specified year and the previous year.

Figure 2

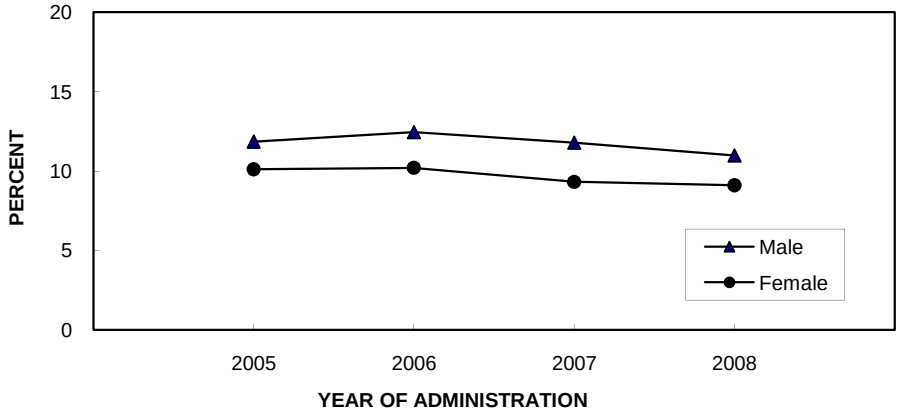
Trends* in Having More than One Partner in the Last 12 Months by Gender



Trends* in Having a Partner of the Same/Both Genders by Gender[a]



Trends* in Annual Blood Donation by Gender



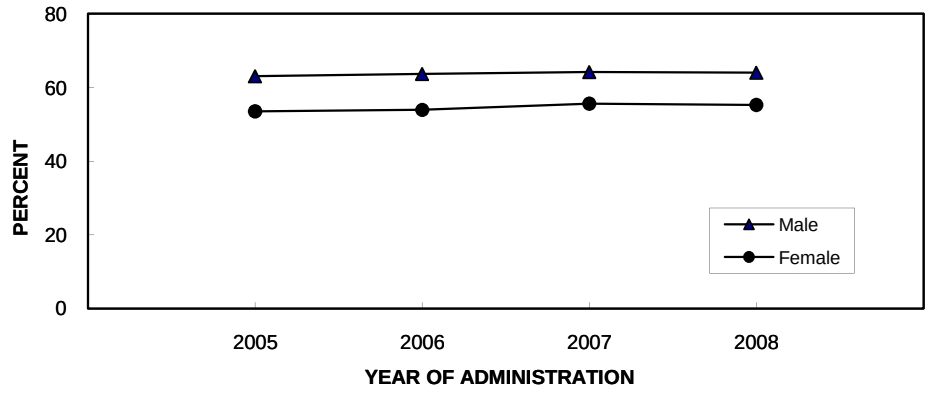
Source. The Monitoring the Future study, the University of Michigan.

*Each point plotted here is the mean of the specified year and the previous year.

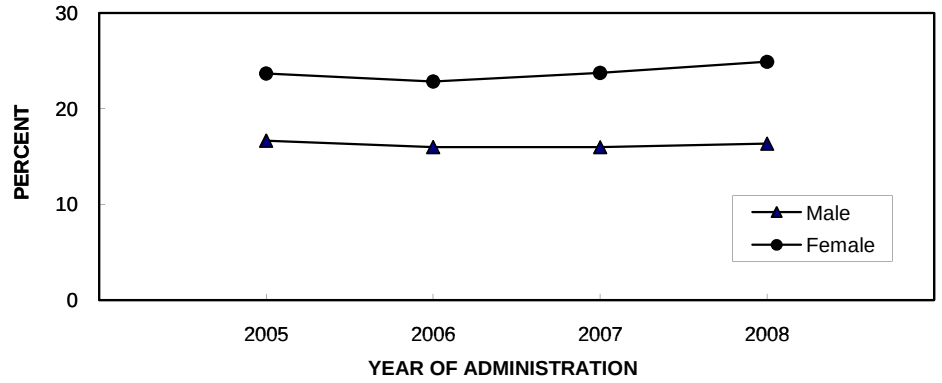
[a]Based on those reporting sex with one or more partners during the past year. Those reporting no partners are omitted.

Figure 3

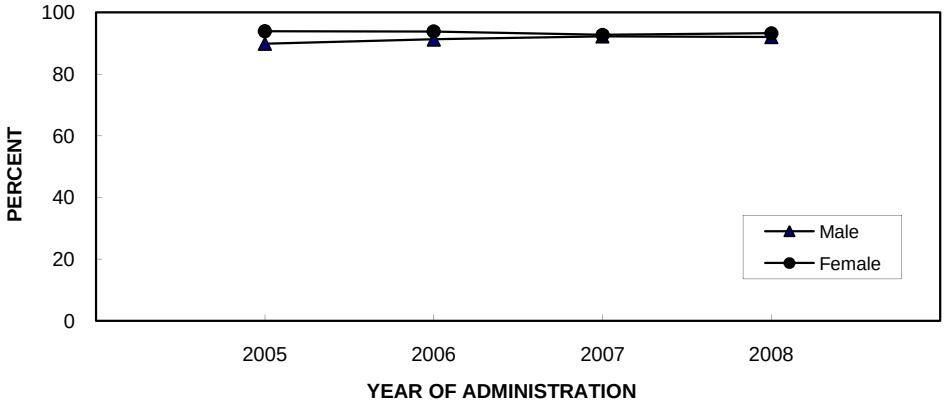
Trends* in Annual Condom Use by Gender[a]



Trends* in Having an HIV/AIDS Test in the Last 12 Months by Gender



Trends* in Receiving HIV/AIDS Test Results by Gender[b]



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

*Each point plotted here is the mean of the specified year and the previous year.

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

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

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