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## Sexual Orientation and Health Among U.S. Adults: National Health Interview Survey, 2013

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### Abstract

*Objective*—To provide national estimates for indicators of health-related behaviors, health status, health care service utilization, and health care access by sexual orientation using data from the 2013 National Health Interview Survey (NHIS).

*Methods*—NHIS is an annual multipurpose health survey conducted continuously throughout the year. Analyses were based on data collected in 2013 from 34,557 adults aged 18 and over. Sampling weights were used to produce national estimates that are representative of the civilian noninstitutionalized U.S. adult population. Differences in health-related behaviors, health status, health care service utilization, and health care access by sexual orientation were examined for adults aged 18–64, and separately for men and women.

*Results*—Based on the 2013 NHIS data, 96.6% of adults identified as straight, 1.6% identified as gay or lesbian, and 0.7% identified as bisexual. The remaining 1.1% of adults identified as “something else,” stated “I don’t know the answer,” or refused to provide an answer. Significant differences were found in health-related behaviors, health status, health care service utilization, and health care access among U.S. adults aged 18–64 who identified as straight, gay or lesbian, or bisexual.

*Conclusion*—NHIS sexual orientation data can be used to track progress toward meeting the Healthy People 2020 goals and objectives related to the health of lesbian, gay, and bisexual persons. In addition, the data can be used to examine a wide range of health disparities among adults identifying as straight, gay or lesbian, or bisexual.

**Keywords:** sexual minority • sexual identity • health status • health care access

### Introduction and Background

The elimination of health disparities has long been a focus in the field of

public health. Although differences in health outcomes by race and ethnicity, sex, and poverty status are historically well-documented, this has not been the case for other sociodemographic

characteristics. Interest in and information on disparities by sexual orientation has been increasing. For instance, recent studies have examined the health and health care of lesbian, gay, and bisexual (LGB) populations and have found clear disparities among sexual minority groups (i.e., gay or lesbian and bisexual) and between sexual minorities and straight populations. These disparities appear to be broad-ranging, with differences identified for various health conditions (e.g., asthma, diabetes, cardiovascular disease, or disability) (1–4), health behaviors such as smoking and heavy drinking (1–3,5), and health care access and service utilization (1,6,7). Across most of these outcomes, sexual minorities tend to fare worse than their nonminority counterparts.

Seeking to address those and other health disparities, the U.S. Department of Health and Human Services’ Healthy People 2020 initiative includes the goal of improving the health, safety, and well-being of lesbian, gay, bisexual, and transgender (LGBT) persons. One specific objective within this goal is to increase the number of population-based data systems using a standard set of sexual orientation questions to monitor Healthy People objectives (8). A number of challenges to the collection of sexual



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orientation data were identified in a consensus study report from the Institute of Medicine on LGBT health. These include defining and operationalizing the different facets of sexual orientation (behavior, attraction, and identity) and obtaining sufficiently large samples of these relatively small populations to permit meaningful analyses (9). To begin to address these objectives and challenges, the Centers for Disease Control and Prevention's National Center for Health Statistics developed questions on the identity component of sexual orientation (10) and added them to the 2013 National Health Interview Survey (NHIS). The ongoing collection of information on sexual orientation in NHIS will enable more consistent, long-term monitoring of the Healthy People 2020 goal of improving the health, safety, and well-being of LGB persons (8).

Because the 2013 data release marks the first time nationally representative data on sexual orientation are available in NHIS, the goals of this report are to present population distributions of sexual orientation and examine prevalence rates of select health indicators across sexual orientation groups.

## Methods

### Data source

Data from the 2013 NHIS were used to generate the estimates presented in this report. NHIS is an annual multipurpose health survey conducted continuously throughout the year and serves as a primary source of health data on the civilian noninstitutionalized population of the United States (11). Data are collected by trained interviewers with the U.S. Census Bureau using computer-assisted personal interviewing (CAPI), a data collection method in which an interviewer meets with respondents face-to-face to ask questions and enter the answers into a laptop computer. When necessary, interviewers may complete missing portions of the interview over the telephone.

The survey has four main modules: the Household Composition Section, Family Core, Sample Adult Core, and Sample Child Core. The Household Composition Section of the questionnaire collects some basic demographic and relationship information about all persons in the household. The Family Core questionnaire, which is administered separately for each family in the household, collects information on all persons in the family. Topics in the Family Core include sociodemographic characteristics, basic indicators of health status, health insurance coverage, and access to and utilization of health care services. From each participating family, one sample child (if there are any children aged 17 years and under) and one sample adult aged 18 years and over are randomly selected, and information on each is collected with the Sample Child and Sample Adult questionnaires, respectively. The Sample Adult Core interview collects additional data on health status and conditions, health behaviors, functioning and disability, and access to and utilization of health care services. The sample adult answers for himself or herself, unless he or she is mentally or physically unable to do so; in that case, a knowledgeable family member serves as a proxy respondent.

Analyses in this report were based on data collected from 34,557 sample adults aged 18 and over. The conditional sample adult response rate (i.e., the number of completed Sample Adult interviews divided by the total number of eligible sample adults) was 81.7%. The final sample adult response rate, calculated by multiplying the conditional response rate by the final family response rate, was 61.2% (12).

### Sexual orientation questions

Starting in 2013, NHIS included questions to ascertain the identity component of the sample adult's sexual orientation. The sexual orientation questions were embedded in the Sample Adult Core, as part of the Adult Selected Items section. This section also contained questions about computer use, satisfaction with health care,

neighborhood tenure, neighborhood attachment, financial worries, sleep, HIV testing, and psychological distress. Questions on gender identity were not included in the 2013 NHIS.

The first of the four cascading sexual orientation questions that were included in the 2013 NHIS, which is asked of all sample adults aged 18 and over, reads, "Which of the following best represents how you think of yourself?" It has five response options, which vary slightly by respondent sex.

For male respondents, they are:

- Gay,
- Straight, that is, not gay,
- Bisexual,
- Something else, and
- I don't know the answer.

For female respondents, the response options are:

- Lesbian or gay,
- Straight, that is, not lesbian or gay,
- Bisexual,
- Something else, and
- I don't know the answer.

Respondents who answered "something else" or "I don't know the answer" were asked one or more follow-up question(s) to provide additional information on their sexual orientation. However, data from these follow-up questions were not used in this report, and the questions will not be included in NHIS starting in 2015 (see forthcoming methodology report for more information). Although not an explicit response option, respondents could refuse to provide an answer to any of these questions.

For the initial sexual orientation question (and the "something else" and "I don't know the answer" follow-up questions), flashcards listing the response options were handed to respondents in the face-to-face interview setting. Respondents were asked to report the number corresponding to their answer. When the questions were administered over the telephone, the interviewer read the response options. Complete text and details of the NHIS sexual orientation questions are provided in the 2013 Sample Adult survey questionnaire, which can be accessed on

the NHIS website: <http://www.cdc.gov/nchs/nhis.htm>. In addition, a detailed methodological report examining the NHIS sexual orientation data is forthcoming.

## Health and health-related variables

Selected health-related indicators were examined for this report. They were selected from among those featured in the “Early Release of Selected Estimates” report series that is produced quarterly with preliminary NHIS data (13). They include measures of health-related behaviors, health status, health care service utilization, and health care access (all measured as or recoded into dichotomous response categories). The specific health behaviors examined were: current cigarette smoking, having consumed five or more alcoholic drinks in one day at least once in the past year, and having met federal guidelines for aerobic activity (through leisure-time physical activity). Measures of health status examined were: having a health status described as excellent or very good, having experienced serious psychological distress in the past 30 days, and being obese (measured only for persons aged 20 and over). Measures of health care service utilization included: having received the influenza vaccine during the past year, and ever having been tested for HIV. Finally, indicators of health care access that were examined were: having a usual place to go for medical care, having failed to obtain needed medical care in the past year due to cost, currently being uninsured (i.e., having no health insurance coverage), currently having coverage through a public health plan, and currently having private health insurance coverage. All of these variables are part of the Sample Adult Core, with the exception of having a health status described as excellent or very good, being currently uninsured, currently having public health plan coverage, and currently having private health insurance coverage; these are part of the Family Core. Further details regarding these health-related indicators

can be found in the [Technical Notes](#) section at the end of this report.

## Statistical analyses

First, population distributions of sexual orientation were calculated overall and by age and sex ([Table 1](#)). Second, prevalence rates of select health indicators across sexual orientation groups were examined, both overall as well as stratified by sex. Because many of the health indicators examined here are correlated with age, and the distribution of sexual minorities differs significantly between adults aged 18–64 and 65 and over (see Results), differences in crude rates are influenced by the differences in the age distributions. Although age adjustment would control for these differences, age-adjusted rates do not reflect the actual burden of these health indicators in the population. Therefore, to provide population-level estimates of the health indicators examined and to provide meaningful tests of differences by sexual orientation, [Tables 2–5](#) first present crude rates for the entire adult population (aged 18 and over), followed by crude rates for the population aged 18–64. However, all statistical comparisons of health indicators by sexual orientation are limited to adults between the ages of 18 and 64 and are based on crude rates. Differences between percentages for point estimates were evaluated using two-tailed significance tests at the 0.05 level, with no adjustments made for multiple comparisons. Given limited statistical power resulting from small sample sizes, some observed differences are large yet do not reach statistical significance.

Estimates that do not meet *a priori* standards of reliability or precision are noted in the tables. Only estimates with a relative standard error (RSE) equal to or less than 30.0% are considered reliable (see [Technical Notes](#)). Estimates with an RSE greater than 30.0% and less than or equal to 50.0%, although reported, are considered unreliable and denoted in the tables with an asterisk. Estimates with an RSE greater than 50.0%, denoted with a dagger in the tables, are not reported due to

insufficient reliability and precision of the point estimate.

To account for the multistage, complex sampling design of NHIS, estimates and standard errors presented in this report are based on weighted data that were analyzed using SAS version 9.3 and SAS-callable SUDAAN version 11.0 software. All estimates presented in the following section are thus generalizable to the adult civilian noninstitutionalized U.S. population.

## Results

### Sexual orientation

Among all U.S. adults aged 18 and over, 96.6% identified as straight, 1.6% identified as gay or lesbian, and 0.7% identified as bisexual. The remaining 1.1% of adults identified as “something else” (0.2%), selected “I don’t know the answer” (0.4%), or refused to provide an answer (0.6%). After classifying as missing data and dropping from the analyses those cases with responses of “something else,” “I don’t know the answer,” and refused, the percentage of adults who identify as gay or lesbian and bisexual remained unchanged, and the percentage of adults who identify as straight increased slightly to 97.7% ([Table 1](#)). For the remainder of this report, estimates are based on a three-category measure of sexual orientation: gay or lesbian, straight, and bisexual.

[Table 1](#) also presents the percent distribution of sexual orientation by sex and age group. The examination by respondent sex showed no significant differences in the percentage of men and women who identified as gay or lesbian, or straight. By contrast, a higher percentage of women (0.9%) than men (0.4%) identified as bisexual. The examination by age revealed that the percentage of adults who identified as gay or lesbian was similar for adults aged 18–44 (1.9%) and adults aged 45–64 (1.8%), with the estimates for both of these groups being higher than the estimate for adults aged 65 and over (0.7%). The percentage of adults who identified as bisexual also varied with age. A higher percentage of adults aged

18–44 identified as bisexual (1.1%) compared with adults aged 45–64 (0.4%) and adults aged 65 and over (0.2%).

## Prevalence of selected health indicators by sexual orientation for adults aged 18–64

### Health-related behaviors

As shown in [Table 2](#), a higher percentage of adults aged 18–64 who identified as gay or lesbian (27.2%) or bisexual (29.5%) were current cigarette smokers compared with their counterparts who identified as straight (19.6%). Differences in the prevalence of current cigarette smoking by sexual orientation were also found among women aged 18–64: 27.2% of women who identified as gay or lesbian and 29.4% of women who identified as bisexual were current cigarette smokers, compared with 16.9% of women who identified as straight. No significant differences were found among men aged 18–64.

For the measure of alcohol consumption, a higher percentage of adults aged 18–64 who identified as gay or lesbian (35.1%) or bisexual (41.5%) reported having had five or more drinks in one day at least once in the past year compared with those who identified as straight (26.0%). Among men aged 18–64, a higher percentage of those who identified as bisexual (56.3%) had five or more drinks in one day at least once in the past year compared with those who identified as straight (35.1%). Among women aged 18–64, a higher percentage of those who identified as gay or lesbian (27.7%) or bisexual (34.9%) had five or more drinks in one day at least once in the past year compared with those who identified as straight (17.2%).

With regard to meeting the federal physical activity guidelines for aerobic activity, no significant differences were found by sexual orientation, neither among adults overall aged 18–64 nor for women or men in this age group.

### Health status indicators

Percent distributions by sexual orientation for the health status indicators are shown in [Table 3](#). No significant differences were found by sexual orientation for the percentage of adults aged 18–64 with excellent or very good health, neither overall nor among men. Among women, however, a higher percentage of those who identified as straight (63.3%) were in excellent or very good health compared with women who identified as gay or lesbian (54.0%).

A higher percentage of adults aged 18–64 who identified as bisexual (11.0%) experienced serious psychological distress in the past 30 days compared with their counterparts who identified as straight (3.9%). Among women aged 18–64, a higher percentage of those who identified as bisexual (10.8%) experienced serious psychological distress compared with those who identified as straight (4.5%).

No significant differences were found overall in the percentage of adults aged 20–64 who were obese. Significant differences were observed in the sex-stratified comparisons, however. A higher percentage of men aged 20–64 who identified as straight (30.7%) were obese than men who identified as gay (23.2%); among women aged 20–64, a higher percentage of those who identified as bisexual (40.4%) were obese than women who identified as straight (28.8%).

### Health care service utilization

Prevalence estimates for the two select health care service utilization indicators by sexual orientation are presented in [Table 4](#). A higher percentage of adults aged 18–64 who identified as gay or lesbian (42.9%) received an influenza vaccination in the past year compared with those adults aged 18–64 who identified as straight (35.0%). Among men aged 18–64, a higher percentage of those who identified as gay (46.1%) received an influenza vaccination in the past year compared with those who identified as straight (30.9%). Among women aged 18–64, no significant differences were

found in the receipt of an influenza vaccination in the past year.

For HIV testing, among all adults aged 18–64, a higher percentage of those who identified as gay or lesbian (68.7%) have ever been tested for HIV, followed by those who identified as bisexual (53.5%), and then by those who identified as straight (41.7%). Among men aged 18–64, this same pattern was found, where the highest percentage of HIV testing was among those who identified as gay (81.2%), followed by those who identified as bisexual (54.3%), and then by those who identified as straight (36.1%). Among women aged 18–64, no significant differences in HIV testing were found.

### Health care access

For the series of indicators pertaining to health care access ([Table 5](#)), among all adults aged 18–64, a higher percentage of those who identified as straight (81.0%) had a usual place to go for medical care compared with those who identified as bisexual (72.5%). Among men aged 18–64, no significant differences in having a usual place to go for medical care were found. Among women aged 18–64, by contrast, a higher percentage of those who identified as straight (85.5%) had a usual place to go for medical care than those who identified as gay or lesbian (75.6%) or bisexual (71.6%).

A higher percentage of adults aged 18–64 who identified as bisexual (16.5%) failed to obtain needed medical care in the past year due to cost compared with the percentage of adults aged 18–64 who identified as straight (8.8%). Among women aged 18–64, a higher percentage of those who identified as gay or lesbian (15.2%) failed to obtain needed medical care in the past year due to cost compared with those who identified as straight (9.6%). No significant differences by sexual orientation were found among men aged 18–64 for this indicator.

For indicators of health insurance coverage, no significant differences in uninsurance rates were found by sexual

orientation when looking at all adults aged 18–64 or women in this age bracket. Among men aged 18–64, however, a higher percentage of those who identified as straight (21.9%) were uninsured compared with those who identified as gay (15.7%).

Among all adults aged 18–64, and separately for men and women, no significant differences were found by sexual orientation for having public health plan coverage. By contrast, for private health insurance coverage, a higher percentage of all adults aged 18–64 who identified as gay or lesbian (68.9%) had private health insurance coverage compared with those who identified as bisexual (57.1%). No significant differences in private health insurance coverage were found in the sex-stratified comparisons, but the patterns are the same.

## Discussion

For the first time in its 57-year history, the 2013 NHIS included a measure of sexual orientation, thereby enabling researchers and data users to examine how the prevalence of a wide variety of health-related behaviors, health status indicators, and measures of health care service utilization and access vary across categories of sexual orientation in a representative sample of the civilian noninstitutionalized U.S. adult population. The goal of this report was to examine a select set of key health indicators by sexual orientation.

Among U.S. adults aged 18 and over, 97.7% identified as straight, 1.6% as gay or lesbian, and 0.7% as bisexual. These distributions differed by both sex and age. A higher percentage of women identified as bisexual, a finding consistent with other documented estimates of sexual orientation (14). With regard to age, a lower percentage of adults aged 65 and over identified as gay or lesbian (0.7%) or bisexual (0.2%) compared with adults aged 18–44 (gay or lesbian: 1.9%; bisexual: 1.1%) and adults aged 45–64 (gay or lesbian: 1.8%; bisexual: 0.4%). NHIS estimates of the percentage of adults who identified as gay or lesbian are consistent with those reported in other

surveys, whereas the NHIS estimates of the percentage of adults who identified as bisexual are lower. For example, national estimates of the bisexual population from the 2008 General Social Survey were 1.1% (14). Although beyond the scope of this report, differences in question wording and survey design (e.g., mode of administration, survey content, and placement of the sexual orientation survey question), as well as differences in survey time period, are possible reasons for these differences. The impact of survey design features on prevalence estimates of sexual orientation based on NHIS data are discussed in detail in a forthcoming methodology report.

As described earlier, to provide information on the actual levels of the health indicators examined in this report and to provide meaningful tests of differences by sexual orientation, all statistical comparisons of health indicators by sexual orientation were limited to adults aged 18–64. Many of the associations between sexual orientation and various health outcomes found in this analysis are similar to those found in past research. For example, a higher percentage of women aged 18–64 who identified as bisexual had experienced serious psychological distress compared with those who identified as straight, which is similar to findings in previous studies examining differences in psychological distress by sexual orientation (1,15). In this report, a higher percentage of adults aged 18–64 who identified as gay or lesbian, or bisexual had five or more drinks in one day in the past year and were current cigarette smokers compared with adults aged 18–64 who identified as straight, which is similar to previous studies examining alcohol consumption (5,16,17) and cigarette smoking (18–20) by sexual orientation. Past studies (6,21) on health care utilization have found a number of significant differences among adults who identify as straight, gay or lesbian, and bisexual, similar to those found in this report. For example, based on NHIS data, a lower percentage of women aged 18–64 who identified as gay or lesbian, or bisexual had a usual

place to go for medical care compared with women aged 18–64 who identified as straight, whereas a lower percentage of adults aged 18–64 who identified as straight failed to obtain needed medical care due to cost compared with adults aged 18–64 who identified as bisexual. In addition, a higher percentage of men aged 18–64 who identified as gay received an influenza vaccination in the past year compared with men aged 18–64 who identified as straight. And finally, among men aged 18–64, a higher percentage of those who identified as gay or bisexual have ever been tested for HIV compared with those who identified as straight.

Survey design and question wording differences alluded to above may exist between NHIS and other data sources, and could very well account for differences in findings across studies. The health indicators used in this report may also be operationalized differently across surveys or research studies. For example, much of the past research that has found poorer reported health among sexual minorities dichotomized this measure as reporting fair or poor health compared with all other health statuses (1,2,22), whereas the present study dichotomized this measure as reporting very good or excellent health compared with all other health statuses. In addition, much of what is known about the health and well-being of sexual minorities has been gleaned from studies using state-level or more specialized samples that (unlike NHIS) do not allow for generalizations to be made to the U.S. adult population (a distinct strength of NHIS). However, even with a sample of 34,557 adults, the number of adults who identified as either gay or lesbian, or bisexual in NHIS is relatively small, and for certain health indicators, this small sample size results in unreliable estimates. Multiple years of NHIS data may need to be used before reliable estimates can be generated for select health indicators by sexual orientation.

The findings presented here provide an initial examination of health differences by sexual orientation using NHIS data and are not intended to be comprehensive. NHIS includes a wide range of survey questions on health, and

the addition of questions on sexual orientation will facilitate many opportunities for future researchers to examine health among sexual minority populations using a nationally representative sample of U.S. adults. In addition, the NHIS sexual orientation survey questions should help meet Healthy People 2020 goals and objectives related to health among LGBT persons (8).

## References

- Dilley JA, Simmons KW, Boysun MJ, Pizacani BA, Stark MJ. Demonstrating the importance and feasibility of including sexual orientation in public health surveys: Health disparities in the Pacific Northwest. *Am J Public Health* 100(3):460–7. 2010.
- Kim HJ, Fredriksen-Goldsen KI. Hispanic lesbians and bisexual women at heightened risk for health disparities. *Am J Public Health* 102(1):e9–15. 2012.
- Fredriksen-Goldsen KI, Kim HJ, Barkan SE, Muraco A, Hoy-Ellis CP. Health disparities among lesbian, gay, and bisexual older adults: Results from a population-based study. *Am J Public Health* 103(10):1802–9. 2013.
- Farmer GW, Jabson JM, Bucholz KK, Bowen DJ. A population-based study of cardiovascular disease risk in sexual-minority women. *Am J Public Health* 103(10):1845–50. 2013.
- Drabble L, Midanik LT, Trocki K. Reports of alcohol consumption and alcohol-related problems among homosexual, bisexual and heterosexual respondents: Results from the 2000 National Alcohol Survey. *J Stud Alcohol* 66(1):111–20. 2005.
- Conron KJ, Mimiaga MJ, Landers SJ. A population-based study of sexual orientation identity and gender differences in adult health. *Am J Public Health* 100(10):1953–60. 2010.
- Boehmer U, Miao X, Linletter C, Clark MA. Adult health behaviors over the life course by sexual orientation. *Am J Public Health* 102(2):292–300. 2012.
- U.S. Department of Health and Human Services, Office of Disease Prevention and Health Promotion. Healthy People 2020. Washington, DC. Available from: <http://www.healthypeople.gov/2020/default.aspx> [Accessed March 24, 2014].
- Institute of Medicine. The health of lesbian, gay, bisexual, and transgender people: Building a foundation for better understanding. Washington, DC: National Academies Press. 2011.
- Miller K, Ryan JM. Design, development and testing of the NHIS sexual identity question. Hyattsville, MD: National Center for Health Statistics. 2011. Available from: [http://wwwn.cdc.gov/qbank/report/Miller\\_NCHS\\_2011\\_NHIS%20Sexual%20Identity.pdf](http://wwwn.cdc.gov/qbank/report/Miller_NCHS_2011_NHIS%20Sexual%20Identity.pdf).
- National Center for Health Statistics. National Health Interview Survey, 2013. Public-use data file and documentation. Available from: [http://www.cdc.gov/nchs/nhis/quest\\_data\\_related\\_1997\\_forward.htm](http://www.cdc.gov/nchs/nhis/quest_data_related_1997_forward.htm).
- National Center for Health Statistics. 2013 National Health Interview Survey (NHIS) public use data release survey description. 2014. Available from: [ftp://ftp.cdc.gov/pub/Health\\_Statistics/NCHS/Dataset\\_Documentation/NHIS/2013/srvydesc.pdf](ftp://ftp.cdc.gov/pub/Health_Statistics/NCHS/Dataset_Documentation/NHIS/2013/srvydesc.pdf).
- Ward BW, Schiller JS, Freeman G. Early release of selected estimates based on data from the January–September 2013 National Health Interview Survey. Hyattsville, MD: National Center for Health Statistics. 2014. Available from: <http://www.cdc.gov/nchs/data/nhis/earlyrelease/earlyrelease201403.pdf>.
- Gates GJ. How many people are lesbian, gay, bisexual, and transgender? Los Angeles, CA: The Williams Institute of the University of California, Los Angeles School of Law. 2011.
- Rosario M, Reisner SL, Corliss HL, Wypij D, Frazier AL, Austin SB. Disparities in depressive distress by sexual orientation in emerging adults: The roles of attachment and stress paradigms. *Arch Sex Behav* 43(5):901–16. 2014.
- Gruskin EP, Gordon N. Gay/lesbian sexual orientation increases risk for cigarette smoking and heavy drinking among members of a large Northern California health plan. *BMC Public Health* 6:241. 2006. Available from: <http://www.biomedcentral.com/1471-2458/6/241>.
- Cochran SD, Grella CE, Mays VM. Do substance use norms and perceived drug availability mediate sexual orientation differences in patterns of substance use? Results from the California Quality of Life Survey II. *J Stud Alcohol Drugs* 73(4):675–85. 2012.
- McElroy JA, Everett KD, Zaniletti I. An examination of smoking behavior and opinions about smoke-free environments in a large sample of sexual and gender minority community members. *Nicotine Tob Res* 13(6):440–8. 2011.
- Cochran SD, Bandiera FC, Mays VM. Sexual orientation-related differences in tobacco use and secondhand smoke exposure among US adults aged 20 to 59 years: 2003–2010 National Health and Nutrition Examination Surveys. *Am J Public Health* 103(10):1837–44. 2013.
- Rath JM, Villanti AC, Rubenstein RA, Vallone DM. Tobacco use by sexual identity among young adults in the United States. *Nicotine Tob Res* 15(11):1822–31. 2013.
- Diamant AL, Wold C, Spritzer K, Gelberg L. Health behaviors, health status, and access to and use of health care: A population-based study of lesbian, bisexual, and heterosexual women. *Arch Fam Med* 9(10):1043–51. 2000.
- Cochran SD, Mays VM. Physical health complaints among lesbians, gay men, and bisexual and homosexually experienced heterosexual individuals: Results from the California Quality of Life Survey. *Am J Public Health* 97(11):2048–55. 2007.

**Table 1. Sexual orientation among U.S. adults aged 18 and over, by sex and age group: United States, 2013**

Sexual orientation	Gay or lesbian <sup>1</sup>		Straight <sup>2</sup>		Bisexual	
	Number in thousands	Percent <sup>3</sup> (standard error)	Number in thousands	Percent <sup>3</sup> (standard error)	Number in thousands	Percent <sup>3</sup> (standard error)
Overall . . . . .	3,729	1.6 (0.09)	224,163	97.7 (0.11)	1,514	0.7 (0.06)
Sex						
Men . . . . .	2,000	1.8 (0.14)	108,093	97.8 (0.15)	481	0.4 (0.06)
Women . . . . .	1,729	1.5 (0.12)	116,071	97.7 (0.15)	1,033	0.9 (0.10)
Age group (years)						
18–44 . . . . .	2,028	1.9 (0.15)	104,947	97.1 (0.18)	1,153	1.1 (0.12)
45–64 . . . . .	1,422	1.8 (0.16)	77,686	97.8 (0.17)	289	0.4 (0.07)
65 and over . . . . .	278	0.7 (0.13)	41,531	99.2 (0.14)	73	*0.2 (0.05)

\* Estimate has a relative standard error greater than 30% and less than or equal to 50% and should be used with caution as it does not meet standards of reliability or precision.

<sup>1</sup>Response option provided on the National Health Interview Survey was “gay” for men, and “gay or lesbian” for women.

<sup>2</sup>Response option provided on the National Health Interview Survey was “straight, that is, not gay” for men, and “straight, that is, not gay or lesbian” for women.

<sup>3</sup>Percent distributions in this table may not equal exactly 100.0% due to rounding.

SOURCE: CDC/NCHS, National Health Interview Survey, 2013.

**Table 2. Selected health-related behavior indicators of U.S. adults, by sexual orientation and sex: United States, 2013**

Selected health-related behavior indicator <sup>1</sup>	Both sexes			Men			Women		
	Gay or lesbian <sup>2</sup>	Straight <sup>3</sup>	Bisexual	Gay <sup>2</sup>	Straight <sup>3</sup>	Bisexual	Gay or lesbian <sup>2</sup>	Straight <sup>3</sup>	Bisexual
Aged 18 and over (years)									
Percent (standard error)									
Current cigarette smoker . . . . .	25.8 (2.57)	17.6 (0.31)	28.6 (4.11)	25.8 (3.86)	20.3 (0.46)	28.8 (6.56)	25.7 (3.71)	15.0 (0.40)	28.5 (5.15)
Five or more alcoholic drinks in 1 day at least once in past year . . . . .	33.0 (2.64)	22.3 (0.36)	39.5 (4.15)	39.4 (3.80)	31.1 (0.55)	51.6 (7.28)	25.8 (3.61)	14.3 (0.37)	33.8 (4.91)
Met federal guidelines for aerobic physical activity . . . . .	56.2 (2.82)	49.2 (0.45)	54.8 (4.47)	63.5 (3.59)	53.7 (0.63)	53.3 (7.36)	47.9 (4.18)	45.1 (0.55)	55.5 (5.67)
Aged 18–64 (years)									
Current cigarette smoker . . . . .	27.2 (2.73)	19.6 (0.36)	29.5 (4.29)	27.2 (4.09)	22.3 (0.52)	29.6 (7.05)	27.2 (3.98)	16.9 (0.46)	29.4 (5.29)
Five or more alcoholic drinks in 1 day at least once in past year . . . . .	35.1 (2.80)	26.0 (0.41)	41.5 (4.34)	41.8 (4.01)	35.1 (0.62)	56.3 (7.76)	27.7 (3.83)	17.2 (0.45)	34.9 (5.05)
Met federal guidelines for aerobic physical activity . . . . .	57.9 (2.92)	52.3 (0.50)	55.5 (4.62)	63.7 (3.82)	56.2 (0.69)	54.7 (7.80)	51.3 (4.33)	48.4 (0.62)	55.8 (5.79)

<sup>1</sup>Selected health-related behavior indicators were chosen based on those provided in the report series titled “Early Release of Selected Estimates Based on Data From the National Health Interview Survey” (see reference 13). Definitions of certain selected health-related behavior indicators can be found in the Technical Notes section of this report.

<sup>2</sup>Response option provided on the National Health Interview Survey was “gay” for men, and “gay or lesbian” for women.

<sup>3</sup>Response option provided on the National Health Interview Survey was “straight, that is, not gay” for men, and “straight, that is, not gay or lesbian” for women.

SOURCE: CDC/NCHS, National Health Interview Survey, 2013.

**Table 3. Selected health status indicators of U.S. adults, by sexual orientation and sex: United States, 2013**

Selected health status indicator <sup>1</sup>	Both sexes			Men			Women		
	Gay or lesbian <sup>2</sup>	Straight <sup>3</sup>	Bisexual	Gay <sup>2</sup>	Straight <sup>3</sup>	Bisexual	Gay or lesbian <sup>2</sup>	Straight <sup>3</sup>	Bisexual
Percent (standard error)									
Aged 18 and over (years)									
Health status described as excellent or very good . . . . .	60.3 (2.85)	60.6 (0.40)	58.1 (4.25)	66.2 (3.59)	61.6 (0.55)	63.6 (7.13)	53.4 (4.20)	59.8 (0.51)	55.5 (5.40)
Experienced serious psychological distress in past 30 days . . . . .	4.9 (1.12)	3.7 (0.15)	10.8 (2.78)	*4.5 (1.60)	3.1 (0.19)	†	5.3 (1.55)	4.2 (0.21)	10.9 (2.87)
Obese <sup>4</sup> . . . . .	29.5 (2.61)	29.0 (0.37)	35.3 (4.25)	23.6 (3.03)	29.7 (0.53)	26.3 (6.17)	36.7 (4.17)	28.3 (0.46)	40.9 (5.52)
Aged 18–64 (years)									
Health status described as excellent or very good . . . . .	60.5 (2.97)	64.1 (0.44)	58.3 (4.39)	66.0 (3.78)	64.9 (0.61)	62.3 (7.65)	54.0 (4.33)	63.3 (0.56)	56.5 (5.49)
Experienced serious psychological distress in past 30 days . . . . .	5.0 (1.22)	3.9 (0.17)	11.0 (2.91)	*4.8 (1.72)	3.3 (0.22)	†	*5.2 (1.71)	4.5 (0.24)	10.8 (2.93)
Obese <sup>4</sup> . . . . .	28.9 (2.68)	29.7 (0.41)	34.8 (4.45)	23.2 (3.14)	30.7 (0.60)	25.4 (6.58)	35.9 (4.25)	28.8 (0.53)	40.4 (5.68)

\* Estimate has a relative standard error greater than 30% and less than or equal to 50% and should be used with caution as it does not meet standards of reliability or precision.

† Estimates with a relative standard error greater than 50% are replaced with a dagger and not shown.

<sup>1</sup> Selected health status indicators were chosen based on those provided in the report series titled "Early Release of Selected Estimates Based on Data From the National Health Interview Survey" (see reference 13). Definitions of certain selected health status indicators can be found in the Technical Notes section of this report.

<sup>2</sup> Response option provided on the National Health Interview Survey was "gay" for men, and "gay or lesbian" for women.

<sup>3</sup> Response option provided on the National Health Interview Survey was "straight, that is, not gay" for men, and "straight, that is, not gay or lesbian" for women.

<sup>4</sup> Only calculated for adults aged 20 and over.

SOURCE: CDC/NCHS, National Health Interview Survey, 2013.

**Table 4. Selected health care service utilization indicators of U.S. adults, by sexual orientation and sex: United States, 2013**

Selected health care service utilization indicator <sup>1</sup>	Both sexes			Men			Women		
	Gay or lesbian <sup>2</sup>	Straight <sup>3</sup>	Bisexual	Gay <sup>2</sup>	Straight <sup>3</sup>	Bisexual	Gay or lesbian <sup>2</sup>	Straight <sup>3</sup>	Bisexual
Percent (standard error)									
Aged 18 and over (years)									
Received influenza vaccine during past year . . . . .	45.8 (2.78)	41.1 (0.40)	34.7 (4.22)	48.4 (3.88)	36.9 (0.54)	40.2 (7.00)	42.9 (4.20)	44.9 (0.53)	32.2 (5.24)
Ever been tested for HIV . . . . .	66.6 (2.79)	36.7 (0.41)	53.9 (4.45)	79.5 (3.26)	33.0 (0.55)	56.7 (7.40)	51.6 (4.21)	40.2 (0.54)	52.6 (5.67)
Aged 18–64 (years)									
Received influenza vaccine during past year . . . . .	42.9 (2.89)	35.0 (0.41)	32.7 (4.33)	46.1 (4.14)	30.9 (0.57)	36.6 (7.32)	39.1 (4.23)	38.9 (0.58)	31.0 (5.31)
Ever been tested for HIV . . . . .	68.7 (2.90)	41.7 (0.47)	53.5 (4.61)	81.2 (3.34)	36.1 (0.62)	54.3 (7.89)	54.1 (4.42)	47.0 (0.63)	53.2 (5.81)

<sup>1</sup> Selected health care service utilization indicators were chosen based on those provided in the report series titled "Early Release of Selected Estimates Based on Data From the National Health Interview Survey" (see reference 13). Definitions of certain selected health care service utilization indicators can be found in the Technical Notes section of this report.

<sup>2</sup> Response option provided on the National Health Interview Survey was "gay" for men, and "gay or lesbian" for women.

<sup>3</sup> Response option provided on the National Health Interview Survey was "straight, that is, not gay" for men, and "straight, that is, not gay or lesbian" for women.

SOURCE: CDC/NCHS, National Health Interview Survey, 2013.



**Table 5. Selected health care access indicators of U.S. adults, by sexual orientation and sex: United States, 2013**

Selected health care access indicator <sup>1</sup>	Both sexes			Men			Women		
	Gay or lesbian <sup>2</sup>	Straight <sup>3</sup>	Bisexual	Gay <sup>2</sup>	Straight <sup>3</sup>	Bisexual	Gay or lesbian <sup>2</sup>	Straight <sup>3</sup>	Bisexual
Aged 18 and over (years)									
Percent (standard error)									
Has a usual place to go for medical care . . . . .	80.0 (2.29)	83.9 (0.30)	73.6 (3.96)	82.2 (3.18)	79.7 (0.47)	76.0 (5.72)	77.5 (3.49)	87.8 (0.34)	72.5 (5.14)
Failed to obtain needed medical care in past year due to cost . . . . .	11.7 (1.61)	7.6 (0.20)	16.2 (3.01)	9.4 (2.01)	6.9 (0.28)	*16.1 (5.23)	14.3 (2.49)	8.2 (0.27)	16.2 (3.74)
Currently uninsured . . . . .	16.0 (1.89)	16.5 (0.32)	22.5 (3.62)	14.6 (2.33)	18.3 (0.46)	*19.0 (5.89)	17.6 (2.98)	14.9 (0.37)	24.1 (4.54)
Currently with public health plan coverage . . . . .	20.7 (2.17)	31.1 (0.39)	23.1 (3.69)	19.7 (2.86)	28.0 (0.51)	22.2 (6.57)	21.8 (3.35)	33.9 (0.51)	23.5 (4.49)
Currently with private health insurance coverage . . . . .	69.1 (2.55)	62.3 (0.42)	56.7 (4.40)	70.3 (3.24)	62.7 (0.57)	63.4 (7.47)	67.8 (3.76)	61.9 (0.54)	53.7 (5.50)
Aged 18–64 (years)									
Has a usual place to go for medical care . . . . .	78.6 (2.45)	81.0 (0.35)	72.5 (4.13)	81.2 (3.38)	76.4 (0.55)	74.5 (6.21)	75.6 (3.76)	85.5 (0.41)	71.6 (5.27)
Failed to obtain needed medical care in past year due to cost . . . . .	11.9 (1.68)	8.8 (0.24)	16.5 (3.14)	9.1 (2.02)	8.1 (0.33)	*16.0 (5.61)	15.2 (2.67)	9.6 (0.33)	16.7 (3.85)
Currently uninsured . . . . .	17.3 (2.03)	20.1 (0.37)	23.7 (3.79)	15.7 (2.50)	21.9 (0.54)	*20.8 (6.41)	19.1 (3.21)	18.4 (0.45)	24.9 (4.67)
Currently with public health plan coverage . . . . .	14.8 (1.99)	16.3 (0.33)	19.2 (3.67)	14.0 (2.68)	14.2 (0.42)	*14.9 (6.75)	15.8 (3.02)	18.3 (0.47)	21.1 (4.43)
Currently with private health insurance coverage . . . . .	68.9 (2.68)	65.1 (0.46)	57.1 (4.56)	70.8 (3.36)	65.2 (0.63)	64.3 (8.02)	66.7 (3.98)	64.9 (0.60)	54.0 (5.61)

\* Estimate has a relative standard error greater than 30% and less than or equal to 50% and should be used with caution as it does not meet standards of reliability or precision.

<sup>1</sup>Selected health care access indicators were chosen based on those provided in the report series titled "Early Release of Selected Estimates Based on Data From the National Health Interview Survey" (see reference 13). Definitions of certain selected health care access indicators can be found in the Technical Notes section of this report.

<sup>2</sup>Response option provided on the National Health Interview Survey was "gay" for men, and "gay or lesbian" for women.

<sup>3</sup>Response option provided on the National Health Interview Survey was "straight, that is, not gay" for men, and "straight, that is, not gay or lesbian" for women.

SOURCE: CDC/NCHS, National Health Interview Survey, 2013.

## Technical Notes

### Sexual orientation survey question

Shown below is the main sexual orientation question asked of male and female sample adults in the 2013 National Health Interview Survey (NHIS). The variable name in the 2013 NHIS data file appears in parentheses at the end of each question.

*Which of the following best represents how you think of yourself?*  
(ASISIM)

- *Gay*
- *Straight, that is, not gay*
- *Bisexual*
- *Something else*
- *I don't know the answer*

*Which of the following best represents how you think of yourself?*  
(ASISIF)

- *Lesbian or gay*
- *Straight, that is, not lesbian or gay*
- *Bisexual*
- *Something else*
- *I don't know the answer*

### Terms related to selected health indicators

*Current cigarette smoker*—A person who had smoked more than 100 cigarettes in his or her lifetime and now smokes every day or some days.

*Five or more alcoholic drinks in 1 day at least once in the past year*—A person who had at least 12 drinks of any type of alcoholic beverage in his or her lifetime, and has had five or more drinks of any alcoholic beverage on at least one day in the past year.

*Met federal guidelines for aerobic physical activity*—This refers to meeting the 2008 federal Physical Activity Guidelines for Americans, which are being used for the Healthy People 2020 objectives. Meeting the guidelines for aerobic activity means that adults perform at least 150 minutes a week of moderate-intensity aerobic physical activity, or 75 minutes a week of vigorous-intensity aerobic physical activity, or an equivalent combination of moderate- and vigorous-intensity aerobic

activity. The 2008 guidelines state that aerobic activity should be performed in episodes of at least 10 minutes and preferably should be spread throughout the week. Only leisure-time physical activity is used in the determination of whether or not these guidelines have been met.

*Experienced serious psychological distress in past 30 days*—Six psychological distress questions are included in the Sample Adult Core component of NHIS. These questions ask how often during the past 30 days a respondent experienced certain symptoms of psychological distress: feeling so sad that nothing could cheer you up, nervous, restless or fidgety, hopeless, worthless, that everything was an effort. The response codes (0–4) of the six items for each person were summed to yield a scale with a 0–24 range. A value of 13 or more for this scale is used here to define serious psychological distress.

*Obese*—Obesity is defined as a body mass index (BMI) of 30 kg/m<sup>2</sup> or more. This measure is based on self-reported height and weight. In NHIS, the questions ask for weight and height without shoes.

*Received influenza vaccination in past year*—Separate survey questions asking respondents about receipt of flu shots and receipt of nasal spray flu vaccinations were included in the calculation of flu vaccination estimates.

*Ever been tested for HIV*—For this indicator, individuals who received HIV testing solely as a result of blood donation were considered not to have been tested for HIV.

*Having a usual place to go for medical care*—For this question, the sample adult was asked if they have one or more places to go when they are sick or need advice about their health. The response options were: yes; there is no place; and there is more than one place. Adults who stated that their usual place to go for medical care was a hospital emergency room were categorized as not having a usual place to go for medical care.

*Currently uninsured*—An adult was coded as currently uninsured if he or she did not have any private health

insurance, Medicare, Medicaid, Children's Health Insurance Program (CHIP), state-sponsored or other government-sponsored health plan, or military plan at the time of the interview. A person was also defined as uninsured if he or she had only Indian Health Service coverage, or had only a private plan that paid for one type of service, such as accidents or dental care.

*Currently with public health plan coverage*—An adult was coded as currently with public health plan coverage if he or she had Medicare, Medicaid, CHIP, state-sponsored or other government-sponsored health plan, or a military plan.

*Currently with private health insurance coverage*—An adult was coded as currently having private health insurance coverage if he or she had any comprehensive private insurance plan, including health maintenance and preferred provider organizations. These plans include those obtained through an employer, purchased directly, or purchased through local or community programs, but excludes those plans that pay for only one type of service such as accidents or dental care.

### Two-tailed significance tests and relative standard error

The statistic for all two-tailed tests of significance was calculated as:

$$Z = \frac{|X_a - X_b|}{\sqrt{SE_a^2 + SE_b^2}},$$

where  $X_a$  and  $X_b$  are the two estimates being compared, and  $SE_a$  and  $SE_b$  are the standard errors of those estimates.

The relative standard error (RSE) for each estimate was calculated as:

$$RSE = \frac{SE}{X} * (100)$$

where  $X$  is the estimate, and  $SE$  is the standard error of that estimate.



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