



American Men's Internet Survey (AMIS): Online HIV Behavioral Survey of Men Who Have Sex with Men United States, 2018



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Introduction

Men who have sex with men (MSM) contribute to over half of the more than one million adults living with HIV in the United States[1]. Incidence estimates of HIV infection from 2008 to 2011 have shown an increase in the number of new infections among MSM [2], due to factors including high prevalence, sexual risk behaviors, and not being aware of HIV status. The National HIV Behavioral Surveillance System (NHBS), using venue-based sampling to collect risk behavior data from high-risk populations, has found continued sexual risk and drug use behaviors associated with increased HIV risk among MSM [3]. The Centers for Disease Control and Prevention (CDC) recommends annual HIV testing for sexually active MSM (and more frequent for those with multiple sexual partners) [4], but 2011 NHBS data found only about 67% of HIV-negative or unknown status MSM reported an HIV test in the previous 12 months [5]. Monitoring HIV risk and testing behaviors among MSM is important in understanding epidemic trends and the impact of prevention efforts, including behavioral interventions and strategies to increase HIV testing.

An increasing number of MSM are socializing and identifying sexual partners through the internet, and recruiting MSM online offers an opportunity to supplement venue-based studies, such as NHBS, by including at-risk MSM that may not be reached through traditional means, such as bars and clubs [6]. Additionally, online HIV behavioral surveys allow for the collection of data from a large sample of MSM with broad geographic diversity. This report summarizes findings from a large online HIV behavior survey among MSM. The *American Men's Internet Survey (AMIS)* is a multi-cycle cross-sectional online HIV behavioral survey collecting self-reported data on demographic characteristics, HIV risk behaviors, HIV testing behaviors, and use of HIV prevention services among internet-using MSM in the United States and dependent territories. Participants were recruited online through banner advertisements (ads), and were consented and screened for eligibility after clicking on the ads. Men were eligible for participation if they were 15 years of age or older, U.S. residents, reported ever having oral or anal sex with a man OR identify as gay or bisexual, and able to complete the survey in English. Men who were eligible to participate in the survey completed a self-administered online survey. The survey consisted of a core questionnaire that every participant answered and 2 different subset questionnaires that participants were randomized to at the start of the survey. The core questions were comprised of the following domains: demographics, sexual behavior, HIV testing history, drug and alcohol use, acute HIV infection and other infections, and HIV prevention services exposure. Participants could decline to answer any question. Data were collected using encrypted HIPAA-compliant survey software and stored on an access-restricted secure data server. AMIS is a national research study conducted by Emory University; the procedures and materials were reviewed and approved by Emory's Institutional Review Board.

The tables in this report include data from the 2018 cycle of AMIS, collected between September 2018 and November 2018, among respondents reporting residence in United States. For demographic categories with small cell sizes, data were collapsed or suppressed to prevent identification using the following criteria: 1) all cell sizes <5 in Table 1 were suppressed or categories were combined into smaller subgroups, 2) for all remaining tables, cell sizes in the sample number (denominator) <5 were suppressed or combined into smaller subgroups, 3) where the sample size of a subgroup with <5 in the sample could be determined based on the sample numbers in the remaining subgroups, all data were suppressed. Study questions and full categories are available in Appendix A. These data were collected as a convenience sample and may not be representative or generalizable to all MSM living in a given state.

References

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Table 1. Characteristics of participants in an online survey of MSM, United States, American Men's Internet Survey (AMIS), 2018

		N	%
Race/ethnicity*	Black, non-Hispanic	553	5.5
	Hispanic	1630	16.1
	White, non-Hispanic	7011	69.2
	Other or multiple races	749	7.4
Age (years)	15-24	4230	41.8
	25-29	1308	12.9
	30-39	1503	14.8
	40 or older	3088	30.5
Education	< HS diploma	797	7.9
	HS diploma or equivalent	1527	15.1
	Some college or technical degree	3419	33.8
	College degree or postgraduate education	4275	42.2
Household income	\$0 to \$19,999 annually (\$0 to \$1,667 monthly)	1356	13.4
	\$20,000 to \$39,999 annually (\$1,668 to \$3,333 monthly)	1864	18.4
	\$40,000 to \$74,999 annually (\$3,334 to \$6,250 monthly)	2510	24.8
	\$75,000 or more annually (\$6,251 or more monthly)	3294	32.5
NCHS Urban/Rural category	Large central metro	3680	36.3
	Large fringe metro	2110	20.8
	Medium metro	3317	32.7
	Small metro	1013	10.0

Percentages may not total 100% due to missing data

MSM=men who have sex with men

HS=high school

NCHS=National Center for Health Statistics

***Persons of Hispanic/Latino ethnicity may be of any race**

NOTE: data may be combined or suppressed due to small cell sizes

Table 1. Characteristics of participants in an online survey of MSM, United States, American Men's Internet Survey (AMIS), 2018

		N	%
Self-reported HIV status	Positive	616	6.1
	Not positive	6725	66.4
	Unknown (includes never tested)	2788	27.5
Anal sex without a condom with a male partner, past 12 month	No	3203	31.6
	Yes	6926	68.4
Illicit substances used, past 12 months	No	6433	63.5
	Yes	3696	36.5
Total		10129	100.0

Percentages may not total 100% due to missing data

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Table 2. Sexual behaviors with male partners of participants in an online survey of MSM, United States, American Men's Internet Survey (AMIS), 2018

			Sexual behaviors with male partners in the past 12 months					
				Anal intercourse with a male partner without a condom		Anal intercourse without a condom with a male partner of discordant or unknown HIV status		
			No. in sample	N	%	N	%	
Not positive	Age (years)	15-24	4187	2626	62.7	799	19.1	
		25-29	1268	965	76.1	292	23.0	
		30-39	1399	1072	76.6	308	22.0	
		40 or older	2659	1764	66.3	653	24.6	
	Race/ethnicity*	Black, non-Hispanic	456	294	64.5	130	28.5	
		Hispanic	1557	1049	67.4	367	23.6	
		Other or multiple races	720	449	62.4	166	23.1	
		White, non-Hispanic	6605	4526	68.5	1357	20.5	
	Total			9513	6427	67.6	2052	21.6
	Positive	Age (years)	15-24	43	37	86.0	24	55.8
25-29			40	37	92.5	24	60.0	
30-39			104	86	82.7	60	57.7	
40 or older			429	339	79.0	230	53.6	
Race/ethnicity*		Black, non-Hispanic	97	69	71.1	39	40.2	
		Hispanic	73	58	79.5	41	56.2	
		Other or multiple races	29	21	72.4	13	44.8	
		White, non-Hispanic	406	341	84.0	240	59.1	
Total			616	499	81.0	338	54.9	

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NOTE: data may be combined or suppressed due to small cell sizes

Table 3. Substance using behaviors of participants in an online survey of MSM, United States, American Men's Internet Survey (AMIS), 2018

			<i>Substance use in the past 12 months</i>					
			<i>No. in sample</i>	<i>Used marijuana</i>		<i>Used illicit drugs other than marijuana</i>		
				<i>N</i>	<i>%</i>	<i>N</i>	<i>%</i>	
Not positive	Age (years)	15-24	4187	1611	38.5	861	20.6	
		25-29	1268	427	33.7	312	24.6	
		30-39	1399	468	33.5	332	23.7	
		40 or older	2659	540	20.3	410	15.4	
	Race/ethnicity*	Black, non-Hispanic	456	122	26.8	60	13.2	
		Hispanic	1557	544	34.9	339	21.8	
		Other or multiple races	720	269	37.4	176	24.4	
		White, non-Hispanic	6605	2071	31.4	1311	19.8	
	Total			9513	3046	32.0	1915	20.1
	Positive	Age (years)	15-24	43	22	51.2	12	27.9
25-29			40	14	35.0	13	32.5	
30-39			104	42	40.4	38	36.5	
40 or older			429	111	25.9	109	25.4	
Race/ethnicity*		Black, non-Hispanic	97	18	18.6	9	9.3	
		Hispanic	73	22	30.1	21	28.8	
		Other or multiple races	29	8	27.6	7	24.1	
		White, non-Hispanic	406	137	33.7	132	32.5	
Total			616	189	30.7	172	27.9	

Percentages may not total 100% due to missing data

MSM=men who have sex with men

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NOTE: data may be combined or suppressed due to small cell sizes

Table 4. Sexually transmitted infection testing and diagnosis of participants in an online survey of MSM, United States, American Men's Internet Survey (AMIS), 2018

			<i>No. in sample</i>	<i>Sexually transmitted infection testing in the past 12 months</i>		<i>Sexually transmitted infection diagnosis in the past 12 months</i>	
				<i>N</i>	<i>%</i>	<i>N</i>	<i>%</i>
Not positive	Age (years)	15-24	4187	1419	33.9	330	7.9
		25-29	1268	631	49.8	161	12.7
		30-39	1399	676	48.3	153	10.9
		40 or older	2659	1140	42.9	243	9.1
	Race/ethnicity*	Black, non-Hispanic	456	192	42.1	49	10.7
		Hispanic	1557	642	41.2	169	10.9
		Other or multiple races	720	293	40.7	68	9.4
		White, non-Hispanic	6605	2669	40.4	587	8.9
	Total		9513	3866	40.6	887	9.3
	Positive	Age (years)	15-24	43	37	86.0	13
25-29			40	30	75.0	11	27.5
30-39			104	88	84.6	33	31.7
40 or older			429	293	68.3	78	18.2
Race/ethnicity*		Black, non-Hispanic	97	73	75.3	24	24.7
		Hispanic	73	56	76.7	23	31.5
		Other or multiple races	29	21	72.4	6	20.7
		White, non-Hispanic	406	290	71.4	80	19.7
Total			616	448	72.7	135	21.9

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NOTE: data may be combined or suppressed due to small cell sizes

Table 5. HIV testing behaviors of HIV-negative or unknown serostatus participants in an online survey of MSM, United States, American Men's Internet Survey (AMIS), 2018

		<i>No. in sample</i>	<i>Ever HIV tested</i>		<i>HIV tested in the past 12 months</i>	
			<i>N</i>	<i>%</i>	<i>N</i>	<i>%</i>
<i>Race/ethnicity*</i>	Black, non-Hispanic	456	339	74.3	256	56.1
	Hispanic	1557	1028	66.0	799	51.3
	White, non-Hispanic	6605	4871	73.7	3480	52.7
	Other or multiple races	720	489	67.9	377	52.4
<i>Age (years)</i>	15-24	4187	2115	50.5	1692	40.4
	25-29	1268	1057	83.4	752	59.3
	30-39	1399	1268	90.6	901	64.4
	40 or older	2659	2398	90.2	1650	62.1
<i>Education</i>	< HS diploma	788	188	23.9	150	19.0
	HS diploma or equivalent	1472	774	52.6	589	40.0
	Some college or technical degree	3169	2331	73.6	1679	53.0
	College degree or postgraduate education	3977	3486	87.7	2533	63.7
<i>Household income</i>	\$0 to \$19,999 annually (\$0 to \$1,667 monthly)	1267	847	66.9	623	49.2
	\$20,000 to \$39,999 annually (\$1,668 to \$3,333 monthly)	1729	1288	74.5	947	54.8
	\$40,000 to \$74,999 annually (\$3,334 to \$6,250 monthly)	2344	1828	78.0	1343	57.3
	\$75,000 or more annually (\$6,251 or more monthly)	3088	2409	78.0	1743	56.4

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NOTE: data may be combined or suppressed due to small cell sizes

Table 5. HIV testing behaviors of HIV-negative or unknown serostatus participants in an online survey of MSM, United States, American Men's Internet Survey (AMIS), 2018

		No. in sample	Ever HIV tested		HIV tested in the past 12 months	
			N	%	N	%
<i>NCHS Urban/Rural category</i>	Large central metro	3388	2670	78.8	2016	59.5
	Large fringe metro	1988	1351	68.0	978	49.2
	Medium metro	3157	2188	69.3	1575	49.9
	Small metro	972	622	64.0	421	43.3
<i>Health insurance</i>	None	779	558	71.6	368	47.2
	Private only	6147	4796	78.0	3533	57.5
	Public only	1056	713	67.5	519	49.1
	Other/multiple	729	526	72.2	385	52.8
<i>Total</i>		9513	6838	71.9	4995	52.5

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Table 6. Testing location of last HIV test of HIV-negative or unknown serostatus participants in an online survey of MSM, United States, American Men's Internet Survey (AMIS), 2018

	Location of most recent HIV test	
	N	%
<i>Private doctor's office</i>	3199	48.1
<i>HIV counseling and testing site</i>	651	9.8
<i>Public health clinic/community health clinic</i>	1441	21.6
<i>Street outreach program/mobile unit</i>	245	3.7
<i>Sexually transmitted disease clinic</i>	147	2.2
<i>Hospital (inpatient)</i>	177	2.7
<i>Correctional facility (jail or prison)</i>	5	0.1
<i>Emergency room</i>	36	0.5
<i>At home</i>	474	7.1

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Table 7. Participation in HIV prevention services of HIV-negative or unknown serostatus participants in an online survey of MSM, United States, American Men's Internet Survey (AMIS), 2018

		<i>Prevention services received in the past 12 months</i>						
		<i>No. in sample</i>	<i>Received free condoms</i>		<i>Participated in group discussion</i>		<i>Participated in one-on-one prevention counseling</i>	
			<i>N</i>	<i>%</i>	<i>N</i>	<i>%</i>	<i>N</i>	<i>%</i>
<i>Race/ethnicity*</i>	Black, non-Hispanic	456	226	49.6	40	8.8	80	17.5
	Hispanic	1557	753	48.4	93	6.0	249	16.0
	White, non-Hispanic	6605	2650	40.1	210	3.2	761	11.5
	Other or multiple races	720	353	49.0	35	4.9	119	16.5
<i>Age (years)</i>	15-24	4187	1901	45.4	229	5.5	552	13.2
	25-29	1268	545	43.0	44	3.5	158	12.5
	30-39	1399	537	38.4	37	2.6	181	12.9
	40 or older	2659	1061	39.9	75	2.8	337	12.7
<i>Education</i>	< HS diploma	788	219	27.8	49	6.2	92	11.7
	HS diploma or equivalent	1472	621	42.2	85	5.8	194	13.2
	Some college or technical degree	3169	1433	45.2	124	3.9	428	13.5
	College degree or postgraduate education	3977	1740	43.8	124	3.1	503	12.6
<i>Household income</i>	\$0 to \$19,999 annually (\$0 to \$1,667 monthly)	1267	609	48.1	73	5.8	198	15.6
	\$20,000 to \$39,999 annually (\$1,668 to \$3,333 monthly)	1729	738	42.7	60	3.5	255	14.7
	\$40,000 to \$74,999 annually (\$3,334 to \$6,250 monthly)	2344	991	42.3	98	4.2	309	13.2
	\$75,000 or more annually (\$6,251 or more monthly)	3088	1287	41.7	95	3.1	337	10.9

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NOTE: data may be combined or suppressed due to small cell sizes

Table 7. Participation in HIV prevention services of HIV-negative or unknown serostatus participants in an online survey of MSM, United States, American Men's Internet Survey (AMIS), 2018

		<i>Prevention services received in the past 12 months</i>						
		<i>No. in sample</i>	<i>Received free condoms</i>		<i>Participated in group discussion</i>		<i>Participated in one-on-one prevention counseling</i>	
			<i>N</i>	<i>%</i>	<i>N</i>	<i>%</i>	<i>N</i>	<i>%</i>
<i>NCHS Urban/Rural category</i>	Large central metro	3388	1693	50.0	166	4.9	505	14.9
	Large fringe metro	1988	802	40.3	72	3.6	240	12.1
	Medium metro	3157	1266	40.1	107	3.4	383	12.1
	Small metro	972	281	28.9	39	4.0	99	10.2
<i>Health insurance</i>	None	779	324	41.6	27	3.5	105	13.5
	Private only	6147	2668	43.4	225	3.7	800	13.0
	Public only	1056	459	43.5	64	6.1	167	15.8
	Other/multiple	729	326	44.7	28	3.8	90	12.3
<i>Total</i>		9513	4044	42.5	385	4.0	1228	12.9

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Table 8. Knowledge of PrEP and willingness to use PrEP of HIV-negative or unknown serostatus participants in an online survey of MSM, United States, American Men's Internet Survey (AMIS), 2018

		No. in sample	Heard of PrEP		Willing to use PrEP		Used PrEP	
			N	%	N	%	N	%
<i>Race/ethnicity*</i>	Black, non-Hispanic	456	365	80.0	285	62.5	53	11.6
	Hispanic	1557	1180	75.8	928	59.6	187	12.0
	White, non-Hispanic	6605	5647	85.5	3524	53.4	962	14.6
	Other or multiple races	720	588	81.7	401	55.7	91	12.6
<i>Age (years)</i>	15-24	4187	3089	73.8	2687	64.2	263	6.3
	25-29	1268	1166	92.0	669	52.8	205	16.2
	30-39	1399	1300	92.9	663	47.4	312	22.3
	40 or older	2659	2353	88.5	1208	45.4	530	19.9
<i>Education</i>	< HS diploma	788	409	51.9	541	68.7	13	1.6
	HS diploma or equivalent	1472	1061	72.1	931	63.2	83	5.6
	Some college or technical degree	3169	2702	85.3	1876	59.2	366	11.5
	College degree or postgraduate education	3977	3671	92.3	1824	45.9	840	21.1
<i>Health insurance</i>	None	779	645	82.8	484	62.1	59	7.6
	Private only	6147	5434	88.4	3238	52.7	1027	16.7
	Public only	1056	787	74.5	600	56.8	122	11.6
	Other/multiple	729	598	82.0	381	52.3	88	12.1
<i>Household income</i>	\$0 to \$19,999 annually (\$0 to \$1,667 monthly)	1267	995	78.5	780	61.6	121	9.6
	\$20,000 to \$39,999 annually (\$1,668 to \$3,333 monthly)	1729	1448	83.7	1014	58.6	224	13.0
	\$40,000 to \$74,999 annually (\$3,334 to \$6,250 monthly)	2344	2051	87.5	1257	53.6	379	16.2
	\$75,000 or more annually (\$6,251 or more monthly)	3088	2711	87.8	1534	49.7	528	17.1

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Table 8. Knowledge of PrEP and willingness to use PrEP of HIV-negative or unknown serostatus participants in an online survey of MSM, United States, American Men's Internet Survey (AMIS), 2018

		No. in sample	Heard of PrEP		Willing to use PrEP		Used PrEP	
			N	%	N	%	N	%
<i>NCHS Urban/Rural category</i>	Large central metro	3388	2961	87.4	1639	48.4	696	20.5
	Large fringe metro	1988	1603	80.6	1144	57.5	217	10.9
	Medium metro	3157	2601	82.4	1864	59.0	328	10.4
	Small metro	972	738	75.9	575	59.2	69	7.1
<i>Total</i>		9513	7908	83.1	5227	54.9	1310	13.8

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