Estimating the Number of Men Who Have Sex with Men by Race/Ethnicity at the County Level in Texas

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ABSTRACT *This analysis presents a method for estimating the population of men who have sex with men (MSM) at the county and metropolitan area level in Texas. Surveillance data consistently demonstrate that MSM experience a high burden of HIV and other sexually transmitted infections (STIs). Numerous studies have shown that MSM are also vulnerable to many other health concerns such as suicide, substance abuse, domestic violence and assault, homelessness, and mental illness. However, compilation of rates of HIV, STIs, and other health issues is dependent on estimation of population denominators. In the absence of systematic, consistent, and direct assessment of sexual orientation and gender identity in national surveys, it is difficult to estimate the size of at-risk populations. Previous estimates at the national and state level have been calculated using varied methodologies. However, to date, statewide estimates at the county level have only been produced for the state of Florida. County-level and metropolitan area estimates of MSM population were produced using three modified models developed by Lieb et al. These models used data on population and same-sex households from the US Census, along with estimates of sexual behavior from the National Survey on Family Growth. These models produce an estimate of 599,683 MSM in Texas (6.4 % of the adult male population). Metropolitan areas with the highest percentage of MSM population include Dallas and Austin (10.3 and 9.8 %, respectively). County-level estimates of MSM population range from 1.0 to 12.9 %. These local estimates are critical to targeting vulnerable populations and effective allocation of resources for prevention and treatment programs.*

KEYWORDS MSM, Texas, Men who have sex with men, HIV surveillance, Population estimates

INTRODUCTION

Gay men and other men who have sex with men (MSM) continue to experience the highest burden of HIV compared to other groups. MSM are the only group in which the incidence of new HIV diagnoses has been steadily increasing since the epidemic plateaued in the 1990s.¹ Surveillance data suggests that MSM are becoming the highest-risk group for syphilis infection.² Recent studies have also reported increasing numbers of gonorrhea among MSM,³ and suggest that both gonorrhea and chlamydia are severely underestimated in MSM.^{4,5}

In addition to sexually transmitted infections (STIs), MSM are vulnerable to a number of other health concerns. MSM and gay men are at greater risk for

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behavioral health problems, including suicide attempts.^{6–8} Gay men have higher rates of clinical eating disorders compared to heterosexual men.^{9,10} Gay men and MSM, lesbians, and transgender individuals are more likely to use alcohol and drugs and have higher rates of substance abuse compared to the general population,^{6,7,11–15} and MSM are more likely to smoke cigarettes compared to heterosexuals.^{11,15,16} MSM and other sexual minorities are more likely to report experiences of violence and victimization,^{8,17} and gay, lesbian, bisexual, and transgender youth are at greater risk for homelessness than their heterosexual peers.^{18–21}

In light of the health disparities described in these studies, development of health policy focusing on MSM, sexual minorities, and transgendered persons should be an important priority for public health. Identifying the scope and impact of these issues in MSM is dependent on the calculation of rates of disease and risk factors among this population. However, the primary barrier to compilation of rates and other metrics is the lack of population denominator data. This stems from a lack of systematically collected health data on sexual orientation and gender identity. The US Census, which provides the most comprehensive population-level data at both the national and local levels, does not include questions that directly ask sexual orientation. Probability sample surveys that attempt to measure sexual orientation are subject to under reporting and nonresponse distortion, leading to an underestimation of the true population. Many efforts to estimate MSM population size have not been conducted with sufficient frequency and rigor because of the difficulty, high cost, and stigma associated with reaching this population.²²

Lieb et al. developed a set of three models to determine the proportion and number of adult MSM at the state level in each of 17 southern states.⁷ However, states are not homogenous in population demographics, and statewide estimates may not be applicable for each county or metropolitan area. Producing estimates of MSM population at the local level would facilitate assessment of community vulnerability, efficient allocation of resources for prevention and treatment, and more focused efforts to conduct disease surveillance and disrupt transmission. These measures will allow a far better understanding of the scope of the epidemic and vulnerability among MSM and specific race/ethnicity groups within the MSM community. We estimated the MSM population in Texas at the county and metropolitan area level by applying a modified version of Lieb et al.'s models, using 3-year population estimates from the US Census.

METHODS

Lieb et al.'s models were applied to all Texas counties with published US Census data on the percentage of households with same-sex male unmarried partners. The models were also applied to the major metropolitan areas most severely affected by the HIV/AIDS epidemic. Metropolitan areas were defined as the counties comprising each city designated as a Transitional Grant Area (TGA) or Eligible Metropolitan Area (EMA) by Ryan White programs for purposes of funding allocation. In depth discussion of the methodology behind Lieb et al.'s models can be found in the sourced paper.²³

County-level population data derived from the 2010 US Census were obtained from the US Center for Health Statistics.²⁴ Estimates of the number of same-sex unmarried partners (SSMP) in Texas households were obtained from the 2010 US

Census American Community Survey.²⁵ Although the ACS is administered annually, geographic areas with smaller populations combine 3 or 5 years of data in order to produce statistically valid estimates. One-year census estimates were available for very few Texas counties; 3-year census estimates were available for 74 of Texas' 254 counties, while 5-year census estimates were available for nearly all counties.

Although 3-year estimates were only available for 74 of the 254 counties, these 74 counties account for 89 % of Texas' population and all of its metropolitan areas. Texas' population increased 7 % in the 5-year period of 2008–2012. During the same time period, the population of Texas metropolitan areas increased from 8.2 % in Dallas to 12.3 % in Austin.²⁴ Using 3-year census estimates provided more timely data than the 5-year estimates while still accounting for the vast majority of Texas' population.

Model A

Model A assumes the proportion of men who are MSM is consistent in all rural (1 %) suburban (4 %), and urban (9 %) urban settings.²⁶ We applied these proportions to state and county-level estimates of the male population obtained from the 2000 US Census.

$$\begin{aligned} \% \text{ MSM county}_i &= (\text{rural male population county}_i \times 0.01) \\ &\quad + (\text{suburban male population county}_i \times 0.04) \\ &\quad + (\text{urban male population county}_i \times 0.09) \end{aligned}$$

Model B

Lieb's Model B assumes the "relative concentration of same-sex male unmarried partners (SSMP) in a state's households is an indicator of the concentration of MSM in the state."²² Similarly, we assumed that the relative concentration of SSMP in a county's households would therefore be an indicator of the concentration of MSM in that county.

This model first calculates a ratio of a Texas county's proportion of SSMP in Texan households to the county's proportion of households in Texas, producing an MSM index.

$$\begin{aligned} \text{MSM index county}_i &= (\text{\#SSMP county}_i / \text{\#SSMP Texas}) / (\text{\#households county}_i / \text{\#households Texas}) \end{aligned}$$

Lieb's model B multiplies the national estimate of the percentage of men who are MSM obtained from the US National Survey on Family Growth (NSFG) (6 %)²⁶ by state-level MSM Indices to obtain the MSM population for each state. However, NSFG did not produce estimates of MSM at the Texas state and county levels; therefore, the county-level proportions of MSM derived in model A were applied to each corresponding county's MSM index.

$$\text{Percent MSM county}_i = \text{MSM index county}_i \times \% \text{ MSM Model A county}_i$$

County-level estimates of the proportion of adult males (≥ 18 years old) who are MSM were then calculated by averaging the results of Models A and B.

$$\text{Average \% MSM county}_i = (\% \text{ MSM model A county}_i + \% \text{ MSM model B county}_i) / 2$$

Final county-level estimates of the number of adult MSM were calculated by multiplying this county-level proportion of MSM by the county-level adult (≥ 18 years) male population estimate.

$$\text{Number of MSM county}_i = \text{average \% MSM county}_i \times \text{adult male population county}_i$$

Model C

Model C calculates race-/ethnicity-specific estimates of MSM at the county level. Lieb calculated ratios of the percentage MSM for blacks, Hispanics, and other racial groups using whites as the reference group.²⁶ We assumed that these ratios would apply to all counties within Texas. Each race-specific ratio was multiplied by the estimated percent MSM for each county obtained in models A and B (which includes males of all races) and the county's total male population for that race.

Race_i MSM estimate

$$= \text{average \% MSM county}_i \times \text{race}_i \text{ adult male population county}_i \\ \times \text{Lieb's \% MSM ratio for race}_i$$

These race-/ethnicity-stratified adult MSM estimates were summed to produce final county-level estimates.

Model C final estimate =

$$\text{White MSM estimate} + \text{Black MSM estimate} + \text{Hispanic MSM estimate} + \\ \text{Other race MSM estimate}$$

The number of MSM living with HIV was compared to the estimates of MSM population in Texas counties by race to assess the validity of the methodology used to produce these estimates. The number of MSM living with HIV was comprised of the cumulative count of individuals living with HIV in Texas who are not known to be deceased with an identified or imputed risk factor of male-male sexual contact.²⁷ Data on the number of MSM living with HIV was obtained from Texas' enhanced HIV/AIDS reporting system (eHARS).

RESULTS

Estimates

We estimate that in 2012, Texas had an adult MSM population of 599,683 or 6.4 % of males ≥ 18 years of age. The racial breakdown of the MSM population includes 315,000 (53 %) Whites, 56,000 (9 %) Blacks, 213,000 (36 %) Hispanic/Latinos, and 16,000 (3 %) men of other races. The estimates show considerable variability in county-specific racial/ethnic percentages of MSM (Tables 1 and 2).

The largest populations of MSM populations reside in metropolitan areas with the highest concentrations in the Dallas and Austin metropolitan areas (10.3 and 9.8 % respectively). In Dallas and Travis counties, the two central counties in these

TABLE 1 Estimated number of MSM and percentage of adult males who are MSM by metropolitan area, 3-year estimates, 2010–2012

	White		Black		Hispanic		Other		Total	
	Estimate	%	Estimate	%	Estimate	%	Estimate	%	Estimate	%
Austin TGA	44,172	11.0	4071	8.4	20,460	10.4	2158	5.6	70,860	10.3
Dallas EMA	87,767	10.7	19,458	8.2	43,095	10.1	6208	5.4	156,528	9.8
Houston EMA	69,850	8.7	21,418	6.7	56,743	8.3	7048	4.4	155,058	7.9
Fort Worth TGA	41,438	8.8	6358	6.8	15,032	8.4	1800	4.5	64,628	8.3
San Antonio TGA	21,039	7.3	2971	5.6	26,356	6.9	779	3.7	51,144	6.9
Texas Total	314,909	6.9	56,078	5.3	213,139	6.5	15,556	3.5	599,683	6.4

TGA Transitional Grant Area, EMA Eligible Metropolitan Area

TABLE 2 Estimates of number and percentage of adult males who are MSM in Texas by county; 3-year estimates, 2010–2012

	Whites		Blacks		Hispanics		Other race		Total	
	Estimate	%	Estimate	%	Estimate	%	Estimate	%	Estimate	%
Texas	314,909	6.9	56,078	5.3	213,139	6.5	15,556	3.5	599,683	6.4
Anderson County	252	1.6	96	1.2	76	1.5	2	0.8	426	1.4
Angelina County	356	1.7	57	1.3	94	1.6	4	0.9	511	1.6
Bandera County	306	4.4	2	3.4	55	4.2	2	2.3	365	4.4
Bastrop County	196	1.2	21	0.9	94	1.1	2	0.6	313	1.1
Bell County	4115	6.5	1189	5.0	1443	6.2	148	3.3	6895	6.0
Bexar County	16,722	7.6	2842	5.9	25,371	7.3	755	3.9	45,690	7.2
Bowie County	744	3.1	200	2.4	92	3.0	9	1.6	1045	2.9
Brazoria County	4158	6.3	769	4.9	1876	6.0	226	3.2	7029	5.9
Brazos County	2892	5.7	322	4.4	941	5.4	161	2.9	4316	5.4
Brown County	263	2.4	11	1.9	58	2.3	2	1.2	334	2.4
Burnet County	204	1.6	4	1.2	45	1.5	1	0.8	254	1.5
Caldwell County	751	10.8	84	8.3	647	10.3	11	5.5	1493	10.3
Cameron County	1030	5.6	32	4.3	5947	5.3	35	2.9	7043	5.3
Cass County	91	1.0	14	0.8	3	1.0	0	0.5	109	1.0
Chambers County	261	2.8	24	2.2	63	2.7	3	1.4	351	2.7
Cherokee County	209	1.7	40	1.3	58	1.6	1	0.9	308	1.6
Collin County	17,087	8.9	1647	6.9	3398	8.5	1668	4.6	23,800	8.2
Comal County	1709	5.4	36	4.1	497	5.1	16	2.7	2258	5.3
Cooke County	187	1.6	5	1.2	29	1.5	2	0.8	222	1.6
Coryell County	1477	8.3	286	6.4	345	7.9	37	4.2	2145	7.8
Dallas County	46,371	14.2	19,338	10.9	42,275	13.4	3968	7.2	111,951	12.8
Denton County	12,934	7.7	1248	5.9	3075	7.3	761	3.9	18,019	7.2
Ector County	2378	10.8	178	8.4	2648	10.3	41	5.5	5246	10.4
Ellis County	2003	5.4	490	4.2	11,071	5.2	134	2.8	13,698	4.8
El Paso County	2955	5.8	204	4.5	645	5.5	17	2.9	3821	7.1
Erath County	268	2.2	6	1.7	57	2.1	2	1.1	333	2.2

Fannin County	386	3.5	39	2.7	51	3.3	3	1.8	480	3.4
Fort Bend County	4978	5.9	1887	4.5	2709	5.6	1222	3.0	10,796	5.0
Galveston County	4910	7.1	734	5.4	1562	6.7	150	3.6	7356	6.7
Grayson County	1394	3.8	75	3.0	165	3.6	21	2.0	1655	3.7
Gregg County	2345	8.3	514	6.4	538	7.9	33	4.2	3430	7.8
Guadalupe County	1249	4.4	119	3.4	678	4.1	20	2.2	2067	4.2
Hardin County	714	4.0	33	3.1	34	3.8	4	2.0	785	3.9
Harris County	54,981	9.9	20,061	7.6	55,887	9.4	5694	5.1	136,623	9.0
Harrison County	490	3.0	116	2.3	71	2.8	4	1.5	680	2.8
Hays County	2124	5.4	101	4.2	1051	5.2	30	2.8	3306	5.2
Henderson County	367	1.5	21	1.2	41	1.4	3	0.8	431	1.5
Hidalgo County	1613	6.3	86	4.8	13,300	6.0	96	3.2	15,095	5.9
Hood County	290	1.6	2	1.3	30	1.6	2	0.8	324	1.6
Hunt County	441	1.8	34	1.4	66	1.7	6	0.9	547	1.7
Jasper County	256	2.5	38	1.9	20	2.4	2	1.3	315	2.4
Jefferson County	2704	6.0	1396	4.6	1019	5.7	127	3.0	5245	5.4
Jim Wells County	60	1.9	2	1.5	203	1.8	1	1.0	267	1.8
Johnson County	2304	5.3	74	4.1	488	5.1	26	2.7	2892	5.2
Kaufman County	482	1.8	52	1.4	99	1.7	5	0.9	638	1.7
Liberty County	322	1.6	37	1.3	75	1.6	3	0.8	437	1.6
Lubbock County	3839	5.9	333	4.6	1742	5.6	98	3.0	6012	5.7
McLennan County	2895	5.3	464	4.1	938	5.1	46	2.7	4344	5.1
Medina County	192	2.2	14	1.7	181	2.1	3	1.1	389	2.1
Midland County	2002	6.9	169	5.3	1209	6.5	36	3.5	3416	6.6
Montgomery County	6201	4.9	263	3.7	1551	4.6	121	2.5	8136	4.7
Moore County	169	5.5	13	4.2	197	5.2	19	2.8	397	5.1
Nacogdoches County	273	1.8	52	1.3	63	1.7	4	0.9	391	1.7
Nueces County	3910	8.5	333	6.5	5797	8.0	112	4.3	10,151	8.1
Orange County	1020	3.9	69	3.0	66	3.7	10	2.0	1165	3.8
Palo Pinto County	200	2.4	5	1.9	37	2.3	1	1.2	243	2.4
Parker County	946	2.4	25	1.9	105	2.3	8	1.2	1084	2.4
Polk County	271	2.0	40	1.5	51	1.9	4	1.0	367	1.9

TABLE 2 Continued

	Whites		Blacks		Hispanics		Other race		Total	
	Estimate	%	Estimate	%	Estimate	%	Estimate	%	Estimate	%
Potter County	1353	5.8	238	4.5	821	5.6	68	3.0	2480	5.5
Randall County	2038	5.7	56	4.4	387	5.4	29	2.9	2511	5.6
Rockwall County	2037	9.3	122	7.2	373	8.9	41	4.8	2573	9.0
San Patricio County	342	3.2	11	2.5	365	3.1	4	1.6	722	3.1
Smith County	3442	6.9	657	5.3	776	6.5	47	3.5	4922	6.5
Tarrant County	36,551	9.9	6880	7.6	15,344	9.4	1927	5.1	60,701	9.2
Taylor County	3000	8.7	242	6.7	782	8.2	48	4.4	4072	8.3
Travis County	32,116	13.8	3462	10.6	16,703	13.1	1962	7.0	54,243	12.9
Upshur County	146	1.2	11	0.9	10	1.1	1	0.6	167	1.1
Victoria County	802	4.9	73	3.8	601	4.6	12	2.5	1488	4.7
Waller County	137	1.8	60	1.4	72	1.7	2	0.9	271	1.6
Washington County	165	1.8	31	1.4	28	1.8	2	0.9	226	1.7
Webb County	207	5.0	14	3.9	3627	4.8	15	2.6	3863	4.8
Wharton County	212	2.8	42	2.2	140	2.7	2	1.4	397	2.7
Wichita County	2067	5.7	259	4.4	450	5.4	44	2.9	2821	5.4
Williamson County	8682	8.1	612	6.3	2596	7.7	372	4.1	12,262	7.7

metropolitan areas, MSM comprise 12.8 and 12.9 % of all male residents, respectively (Table 2). Only two counties, Dallas and Harris (where Houston is located), had adult MSM populations exceeding 100,000 (111,951 for Dallas and 136,623 for Harris).

MSM Living with HIV

The number of MSM living with HIV in Texas in 2012 was estimated to be 41,774, which corresponds to approximately 6.6 % of our estimated MSM population. This is similar to a previous published estimate of the percentage of Texan MSM living with HIV (7.0 %) ²⁸ and several other estimates in other MSM populations using different methodologies. ^{29–31} In all individual counties and metropolitan areas (Table 3) for which MSM population estimates were calculated, the number of MSM living with HIV did not exceed the MSM population, both in total and stratified by race/ethnic group.

DISCUSSION

While individual studies point to significant health disparities for MSM and other sexual minorities, a comprehensive understanding of the scope of inequities faced by these populations cannot be created solely through special studies of individual health conditions. The development of evidence-based health policy is traditionally guided by population based health and demographic surveys which collect crucial data on social determinants of health, including social, economic, and environmental factors. However, in the absence of systematic, consistent, and direct assessment of sexual orientation and gender identity in such surveys, it is impossible to accurately assess social determinants of health in sexual minorities and transgender persons. ^{32,33}

In recent years, numerous medical and governmental institutions have called for routine collection of sexual orientation data in various national surveys. In its 2011 report *The Health of Lesbian, Gay, Bisexual, and Transgender People: Building a Foundation for Better Understanding*, the Institute of Medicine (IOM) recommended collection of gender identity and sexual orientation data on all federally supported surveys. ³⁴ Section 4302 of the Affordable Care Act contains provisions to strengthen assessment of health status and inequities, including a plan to integrate sexual orientation and gender identity variables into all Health and Human Services national surveys. In 2013, the National Health Interview Survey (NHIS) included questions about sexual orientation along with topics historically included on this

TABLE 3 Number of MSM living with HIV by metropolitan area, 2012

	White	Black	Hispanic	Other	Total
Austin TGA	1767	408	1036	30	3325
Dallas EMA	5060	3502	2785	124	11,857
Houston EMA	3851	4237	3675	173	12,199
Fort Worth TGA	1076	740	538	40	2498
San Antonio TGA	888	380	2160	27	3568
Texas Total	15,224	10,986	13,944	1195	41,774

TGA Transitional Grant Area, EMA Eligible Metropolitan Area

household survey (e.g., health insurance, vaccination, obesity). Efforts to add sexual orientation and gender identity are expected to continue, as outlined in the developmental goals in the Healthy People 2020 for the new topic area of lesbian, gay, bisexual and transgender health.

For individual patient care, there are no standards or Meaningful Use Guidelines for collecting information on sexual orientation or gender identity, although the documentation of such information in electronic health records is recommended in the 2011 IOM report and Healthy People 2020 goals referenced above and the Joint Commission's 2010 report, *Advancing Effective Communication, Cultural Competence, and Patient- and Family-Centered Care: A Roadmap for Hospitals*. Systematic and standard inclusion of sexual orientation and gender identity information in clinical settings would provide data that could be used to improve care delivery and inform efforts to reduce health disparities in these groups outside of the traditional domains of (STIs) and HIV.

Until national surveys and medical records guidelines are revised to routinely collect such information, methodologies such as those used in this paper are the best source of population estimation available. The primary application for estimates produced by these methods is their use as denominators for estimating the incidence and prevalence rates of HIV/ STIs and other diseases and risk factors in MSM populations. Estimation of these and other metrics will assist in more effective allocation of funds and services and targeted interventions.

We have demonstrated that estimates of MSM can be produced and updated by state and local health departments and community organizations using publicly accessible population data from the US Census. Model A relies upon decennial US Census data last collected in 2010, but model B can be revised annually with updated ACS data. Producing timely estimates at the county and metropolitan area will depend on the local population size, as annual estimates of SSMP are only published for highly populated areas. This may limit the ability of rural states to produce accurate estimates of the MSM populations residing outside of urban areas.

Our statewide estimate of 6.4 % MSM population differs only slightly from that of Lieb et al.'s published estimate of 6.3 %. However, our estimate is much lower than the recently published NHIS' national estimate of 1.8 %.³⁵ Given the imprecision of methods which rely on proxies for sexual orientation, it is difficult to know whether any these estimates are accurate. Verification of these estimates would be best accomplished through the development and implementation of data collection tools and survey methodologies, several of which are discussed below.

Surveillance data on the number of MSM living with HIV in Texas did not exceed our estimates of the MSM population in Texas, even when stratified by county and race. This would indicate that we did not overestimate the number of MSM living in these counties. This population data will allow for calculation of locally relevant HIV prevalence and new diagnosis rates. Texas also routinely collects sexual orientation information from patients with syphilis infection through public health follow-up programs. This surveillance data can be used in conjunction with the MSM population estimates to calculate syphilis incidence rates among MSM. Currently, sexual orientation is not routinely collected and reported for gonorrhea and chlamydia cases; however, future surveillance

activities, including rectal screening for STIs and public health follow-up for gonorrhea infections in MSM, may allow for calculation of rates of infection in MSM.

LIMITATIONS

We faced several limitations when producing our estimates of MSM population. The two major barriers to determining the proportion of MSM in a region are a lack of sexual orientation data and the compounded margin of error created when generating estimates based upon other estimates.

There is no major reliable source or survey that specifically explores the sexual orientation or behavior of the population in the Texas. We relied on data from the US Census, specifically the percentage of household with same-sex unmarried partners, to serve as a proxy for the concentration of MSM in a particular county. The US Census and American Community Survey (ACS) derives statistics on same-sex couple households using two census questions, relationship to householder and sex of each person in the household. The US Census specifies, "The wrong box may have been checked for the sex of a small percentage of opposite-sex spouses and unmarried partners."³⁶ More importantly, stigma may have led to males inaccurately reporting their relationship to the head of household. The first scenario could result in over or underestimation of the percentage of households with same-sex unmarried partners, while the latter would have resulted in an underestimation.

Three-year census estimates of households with same-sex unmarried partners were only available for 74 of 254 counties. The counties for which 3-year census estimates were not available are mainly rural and only account for 11 % of the state's population. Our analysis shows that urban and highly populated counties tend to have higher percentage MSM populations compared to rural counties. The lack of 3-year census estimates from 180 mostly rural counties likely resulted in an underestimation of state MSM population in models using these census estimates. Additionally, data on the proportion of households located in urban, suburban, and rural areas are only updated during the decennial U.S. Census. Texas has experience unprecedented population growth in the past decade, especially in urban areas, and the lack of recent data may impact the accuracy of estimates produced by Model A.

We could find no published state-level estimates for several variables used in Lieb's models. For both the proportion of males who are MSM in rural, suburban, and urban areas and by race/ethnic groups, we relied on national estimates from the most recent NSFG. The true value of these estimates may be different in Texas. The methodology used in model A relied solely on the rural/urban/suburban composition of the county. In majority rural counties, this methodology likely produced an underestimate of the total MSM population. Similarly, model A likely produced overestimates in heavily urban counties. However, with the aforementioned lack of state-level data on sexual orientation, we have no way to determine the degree to which the national estimates may or may not be applicable to Texas.

CONCLUSION

Creating estimates of the MSM population in Texas counties and metropolitan areas provides Texas State and local health workers with the essential denominators used to calculate both prevalence and incidence estimates. Accurate assessment of disease burden in MSM is an important tool in the mission to better serve this population. These estimates may be used to guide future outreach, efficiently allocate resources, and better target HIV/AIDS and STI surveillance efforts. While estimation methods such as those outlined in this paper are needed to provide context for STI and HIV, they are not a satisfactory long-term substitute for the standardized and systematic inclusion of information on sexual orientation that would allow development of public health policies to improve the whole health of sexual minorities and transgendered persons.

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