## LGBTQ Health in Iowa

## RESULTS FROM A STATE-WIDE SURVEY




## GLOSSARY OF TERMS *

$\begin{array}{ll}\text { Bisexual } & \begin{array}{l}\text { A self-identity used by some people who are sexually or } \\ \text { emotionally attracted to two or more genders. }\end{array} \\ \text { Cisgender } & \begin{array}{l}\text { A person whose gender identity matches the sex they were } \\ \text { assigned at birth; in other words, a non-transgender person. }\end{array} \\ \text { Cis men } & \text { A shortened version of cisgender men. }\end{array}$ Cis women $\left.\left.\left.\begin{array}{l}\text { A shortened version of cisgender women. } \\ \text { Gay } \\ \text { Gender identity } \\ \text { An identity term used by some people who identify as men and } \\ \text { are attracted to men. Some women who are attracted to other } \\ \text { women also identify as gay, but others prefer the term lesbian. }\end{array}\right\} \begin{array}{l}\text { Our way of understanding our inner sense of being male, female, } \\ \text { both, or neither. It sometimes clashes with the way other people } \\ \text { view us physically. }\end{array}\right\} \begin{array}{l}\text { A term that is sometimes used to describe someone who defines } \\ \text { their gender outside the concepts of male and female. This } \\ \text { can include having no gender, being androgynous, or having } \\ \text { elements of multiple genders. }\end{array}\right\}$

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## BACKGROUND

Over the last several decades, there has been growing awareness that lesbian, gay, bisexual, transgender, and queer (LGBTQ) people may have distinct health needs. Indeed, scientific evidence has shown that sexual and gender minority individuals are more likely to smoke, be overweight, have greater risk of certain cancers, attempt suicide, encounter discrimination, face social stigma, and be less likely to receive appropriate health care than heterosexual and cisgender peers. However, much of what is known about LGBTQ health has come from research done in large urban areas, often in coastal states. There have been very few studies of sexual and gender minorities in Midwestern or rural states. Taking the maxim "no data = no problem" as their motivation, a collaborative of faculty and staff from the University of Iowa College of Public Health, One Iowa, the Iowa Cancer Consortium, and Des Moines University came together in 2017 to conduct a state-wide survey of Iowa's LGBTQ population. Their goal was to collect detailed information about the LGBTQ community's health status and needs, which would guide future advocacy and program efforts as well as serve as a way to monitor changes over time.

## METHODS

The research team recruited participants in-person at LGBTQ Pride events across the state from June to August 2017, asking them to complete the survey on a tablet computer. Seeking to extend its reach, the study was advertised on social media and in emails from August to November 2017, with participants completing the survey online. In order to participate, people had to be 18 years or older, self-identify as a sexual or gender minority, and live in Iowa. The survey, which was anonymous, asked questions in six broad areas, including physical and mental health status, experiences using health care, substance use, social support and civic engagement, experiences of discrimination and victimization, and personal characteristics. As the study was anonymous and determined to be low-risk, a waiver of documentation of consent was granted by the University of Iowa Institutional Review Board; however, all participants read and acknowledged an electronic consent letter prior to beginning the survey. Data from both tablet computers and online surveys were regularly downloaded and stored on a secure server at the University of Iowa College of Public Health.

The research team did statistical analyses of quantitative data using SAS software v9.4 (SAS Institute; Cary, NC). First, they compiled descriptive statistics for all survey questions, then explored potential differences by sexual orientation and gender identity sub-groups (for example, through chi-square tests of categorical variables and t-tests of continuous variables). Finally, they assessed the direction of any differences through logistic or linear regression models. The researchers used thematic analysis techniques to summarize qualitative data.

## SUMMARY OF RESULTS

The following pages show key findings by topical area. First, the results are summarized for the whole study in tables. Then any sub-group differences are explained in additional text. When looking at differences by gender identity, the researchers contrasted cis women against cis men and transgender/ genderqueer individuals against cis men. When looking at differences by sexual orientation, they contrasted bisexual/pansexual individuals against gay/lesbian participants and queer individuals against gay/ lesbian participants. As not all participants answered all questions, tables show the number of valid responses for each item when it is less than the total number of participants (i.e., less than 567 responses).

## ACKNOWLEDGEMENTS

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## SELF-RATED HEALTH STATUS

The survey asked participants to rate their own health on a five-point scale, from excellent to poor. Slightly less than half of LGBTQ survey participants said their health was excellent or very good. For comparison, $55 \%$ of Iowans said their health was excellent or very good in the state-wide 2016 Behavioral Risk Factor Surveillance Survey. There were some notable differences by gender identity and sexual orientation as shown to the right.


Cis men were the only group in which more than half (56\%) said they were in very good or excellent health. Compared to cis men, transgender/genderqueer participants were less likely to say they were in very good or excellent health.

Excellent/very good health
■Good/fair/poor health


There were no statistically significant differences between gay/lesbian, bisexual/pansexual, and queer/other groups in self-rated health; but there appears to be room for improvement. Only 40\%-50\% of any sexual identity group said they were in very good or excellent health.

## LIFETIME HEALTH PROBLEMS

## HAS A HEALTHCARE PROVIDER EVER TOLD YOU THAT YOU HAVE ...?

|  | n | (\%) |
| :--- | ---: | :---: |
| Depression | 324 | $(57 \%)$ |
| Anxiety | 289 | $(51 \%)$ |
| Arthritis | 121 | $(21 \%)$ |
| Asthma | 116 | $(20 \%)$ |
| Diabetes | 104 | $(18 \%)$ |
| Post-traumatic stress disorder (PTSD) | 92 | $(16 \%)$ |
| Sexually transmitted infection | 94 | $(17 \%)$ |
| Cancer | 49 | $(9 \%)$ |
| HIV/AIDS | 25 | $(4 \%)$ |
| Cardiovascular disease (CVD) | 15 | $(3 \%)$ |
| Chronic obstructive pulmonary disease (COPD) | 19 | $(3 \%)$ |
| Heart attack | 6 | $(1 \%)$ |
| Kidney disease | 7 | $(1 \%)$ |
| Stroke | 7 | $(1 \%)$ |

## OVERALL

The survey asked participants whether a health care provider had ever told them they had any of 14 different conditions. In general, there were very low levels of most physical health problems (less than 10\%); but about one-fifth of study participants had ever received a diagnosis of arthritis or asthma. In terms of mental health, two problems stood out as very common. More than half of study participants had ever received a diagnosis of depression, and just about half had ever received a diagnosis of anxiety.

Cis women were more likely to have anxiety and post-traumatic stress disorder, but less likely to have a sexually transmitted infection, than cis men.

Transgender/genderqueer individuals had double the likelihood of depression and anxiety, and more than four-times higher likelihood of post-traumatic stress disorder, than cis men. Transgender/ genderqueer individuals also were less likely to have a sexually transmitted infection than cis men.

Bisexual/pansexual individuals were more likely to have anxiety and posttraumatic stress disorder, but less likely to have diabetes and cancer, than gay/lesbian peers.

Queer/other individuals were more likely to have depression, anxiety, and post-traumatic stress disorder, but less likely to have diabetes, than gay/lesbian peers.

## IN THEIR OWN WORDS

The survey asked participants two open-ended questions: What is your biggest health concern? and What would improve your health? Four hundred seventytwo participants provided an answer to the first question, and 442 participants answered the second question. The research team reviewed all responses, using thematic analysis techniques to classify them according to topic. The most frequent answers to each question are shown below.

## WHAT'S YOUR BIGGEST HEALTH CONCERN?

1. Depression/anxiety
2. Physical health
3. Weight/obesity
4. Mental health
5. Heart disease

## WHAT WOULD IMPROVE YOUR HEALTH?

1. Getting more exercise or physical activity
2. Improving nutrition or quality of diet

## 3. Losing weight

4. Getting mental health care
5. Getting a specific health care service or procedure

There appears to be good agreement between concerns about mental health issues and reported diagnoses of depression and anxiety on the previous page. This suggests that participants' perceptions of their health issues correspond well to what health care providers have told them. Given that one of the top answers in response to the second question was to get mental health care, it suggests ongoing unmet mental health needs. Additionally, many participants said they needed a health care service or procedure. Thus, there may be other unmet physical health care needs in this population.

As the previous page showed very low levels of lifetime diagnoses of most physical health conditions, concerns about physical health, weight/obesity, and heart disease may be largely about prevention. Desires to increase physical activity, improve diet, and lose weight may be in response to the threat of developing health problems later in life.


## HEALTH CARE ACCESS \& EXPERIENCES

|  | n | (\%) |
| :--- | ---: | ---: |
| Type of health insurance coverage ( $\mathbf{n = 5 4 5 )}$ |  |  |
| Through an employer | 291 | $(53 \%)$ |
| Through health insurance marketplace <br> (ACA) or directly from insurance <br> company |  |  |
| Medicaid/Medicare | 94 | $(17 \%)$ |
| Through parent's insurance | 37 | $(7 \%)$ |
| Through university or college | 11 | $(2 \%)$ |
| Other source | 3 | $(<1 \%)$ |
| Don't know/no health insurance | 66 | $(8 \%)$ |

Any health care provider visit in past 12 months, regardless of insurance coverage ( $\mathrm{n}=541$ ) 513 (95\%)

How satisfied are you with the care you received, among those who saw a health care provider in the past 12 months?

| Very satisfied | 293 | $(57 \%)$ |
| :--- | ---: | ---: |
| Somewhat satisfied | 195 | $(38 \%)$ |
| Not satisfied | 25 | $(5 \%)$ |
| Has a personal doctor or <br> health care provider ( $\mathrm{n}=545$ ) | 418 | $(77 \%)$ |
| Out to your health care provider as LGBTQ, among <br> those who have a personal doctor or health care <br> provider (n=414) |  |  |
| Out to all | 246 | $(59 \%)$ |
| Out to some | 101 | $(24 \%)$ |
| Not out to any | 67 | $(16 \%)$ |

How much do you think your health care provider knows about lesbian, gay, and bisexual health? ( $n=414$ )

| Almost everything | 77 | $(19 \%)$ |
| :--- | ---: | ---: |
| Most things | 103 | $(25 \%)$ |
| Some things | 84 | $(20 \%)$ |
| Almost nothing | 27 | $(7 \%)$ |
| Not sure | 123 | $(30 \%)$ |


|  | n | (\%) |
| :---: | :---: | :---: |
| How much do you think your health care provider knows about transgender health? ( $\mathrm{n}=415$ ) |  |  |
| Almost everything | 48 | (12\%) |
| Most things | 37 | (9\%) |
| Some things | 39 | (9\%) |
| Almost nothing | 44 | (11\%) |
| Not sure | 247 | (60\%) |
| Ever had to teach health care provider about LGBTQ people in order to get appropriate care ( $\mathrm{n}=535$ ) | 146 | (27\%) |
| Had any period of no health insurance in the past 12 months ( $n=545$ ) | 54 | (10\%) |
| Needed to see a health care provider in the past 12 months but could not or chose not to? $(n=542)$ | 207 | (38\%) |
| Reason for not seeing a health care provider ( $\mathrm{n}=206$ ) |  |  |
| Cost | 73 | (35\%) |
| Something else | 68 | (33\%) |
| Previous negative experiences | 25 | (12\%) |
| No time | 24 | (12\%) |
| No transportation/ distance to health care provider | 15 | (7\%) |
| No interpreter/provider who speaks language | 1 | (<1\%) |

## OVERALL

Nearly all survey participants reported having health insurance, and about half of them obtained it through an employer. A minority (12\%) had no health insurance or were unsure whether they had any health insurance.

Regardless of insurance status, nearly all participants had seen a health care provider in the past year, with slightly more than half reporting that they were very satisfied with the care they received. Nevertheless, over one-third of participants needed to see a health care provider in the past 12 months but could not or chose not to. Reasons were mixed, including logistical barriers (e.g., cost, no time, no transportation) as well as previous negative experiences. The survey did not inquire further about details of the missed health care service; however, among top responses to the question "what would improve your health" were getting mental health care and getting a specific health service or procedure, which suggests both unmet physical and unmet mental health care needs.

About three-quarters of participants said they had a personal doctor or health care provider, and a majority were out as LGBTQ. Slightly less than half thought their health care provider knew most things or almost everything about lesbian, gay, and bisexual health. Only one in five participants thought their health care provider knew most things or almost everything about transgender health. Slightly more than one-quarter of participants said they had had to teach a health care provider about LGBTQ people in order to get appropriate care.

Cis women were more likely to have had a health care visit in the past 12 months but were less likely to be out to health care providers than cis men.

Transgender/genderqueer individuals were more likely than cis men to report not seeing a health care provider when they needed one in the past 12 months, and among those who saw a health care provider in the past 12 months, they were less likely to be very satisfied with the care they received. Transgender/genderqueer individuals were more likely than cis men to say that they've had to teach a health care provider about LGBTQ people in order to receive appropriate care. Surprisingly, transgender/genderqueer people were more likely to say that their health care provider knows almost everything about transgender health. This might mean that they currently get care at a transinclusive clinic, such as the University of lowa LGBTQ Clinic. As the survey did not ask where participants got their health care, we cannot confirm this possible explanation.

Bisexual/pansexual individuals were less likely to have a personal health care provider and to be out to some or all health care providers than gay/ lesbian peers.

Queer/other individuals were more likely to have had a period of no health insurance in the past 12 months, to have not seen a health care provider when they needed in the past 12 months, and to have had to teach a health care provider about LGBTQ people in order to receive appropriate care than gay/lesbian peers. They also were less likely to have a personal health care provider than gay/lesbian peers.

## DISCRIMINATION \& VICTIMIZATION

|  | $\mathbf{n}$ | (\%) |
| :--- | ---: | ---: |
| Feel safe in the town where you currently live ( $\mathbf{n}=5 \mathbf{5 0}$ ) |  |  |
| All of the time | 86 | $17 \%$ |
| Most of the time | 356 | $68 \%$ |
| Some of the time | 73 | $14 \%$ |
| None of the time | 5 | $1 \%$ |

Acceptance of LGBTQ people in the town where you currently live ( $\mathrm{n}=520$ )

| Very accepting | 169 | $33 \%$ |
| :--- | ---: | ---: |
| Somewhat accepting | 224 | $43 \%$ |
| Neutral | 95 | $18 \%$ |
| Not accepting | 25 | $5 \%$ |
| Not accepting at all | 7 | $1 \%$ |


| Experienced discrimination in obtaining health care <br> or health insurance, past 12 months $(\mathrm{n}=512)$ |  |  |
| :--- | ---: | ---: |
| Never/almost never | 479 | $94 \%$ |
| Sometimes | 23 | $4 \%$ |
| Very/fairly often | 10 | $2 \%$ |

Experienced discrimination in how you were treated when obtaining health care, past 12 months ( $\mathrm{n}=511$ )

| Never/almost never | 464 | $91 \%$ |
| :--- | ---: | ---: |
| Sometimes | 35 | $7 \%$ |
| Very/fairly often | 12 | $2 \%$ |


|  | n | (\%) |
| :---: | :---: | :---: |
| Experienced discrimination in any other situation, past 12 months ( $\mathrm{n}=520$ ) |  |  |
| Never/almost never | 332 | 64\% |
| Sometimes | 148 | 28\% |
| Very/fairly often | 40 | 8\% |
| Called names, past 12 months ( $\mathrm{n}=518$ ) |  |  |
| Never/almost never | 389 | 75\% |
| Sometimes | 100 | 19\% |
| Very/fairly often | 29 | 6\% |
| Made fun of, picked on, pushed, shoved, hit, or threatened with harm, past 12 months ( $n=523$ ) |  |  |
| Never/almost never | 466 | 89\% |
| Sometimes | 48 | 9\% |
| Very/fairly often | 9 | 2\% |
| Ever experienced any form of unwanted sexual activity ( $\mathrm{n}=556$ ) | 277 | 50\% |
| Ever homeless ( $\mathrm{n}=523$ ) | 107 | 20\% |
| Currently homeless ( $\mathrm{n}=523$ ) | 5 | 1\% |

Experienced discrimination in public (such as on the street, in stores, or in restaurants), past 12 months ( $n=520$ )

| Never/almost never | 337 | $65 \%$ |
| :--- | ---: | ---: |
| Sometimes | 146 | $28 \%$ |
| Very/fairly often | 37 | $7 \%$ |

## OVERALL

The large majority of participants said they felt safe most or all of the time in the town where they currently lived. About threequarters of participants said their town was somewhat or very accepting of LGBTQ people. At the same time, there were varying levels of six types of anti-LGBTQ discrimination in the past 12 months. The most common experiences-discrimination in public and in other situations-was reported by about one third of participants. One-quarter of participants reported being called names in the past year. Unwanted sexual activity was also very common, having been experienced by half of participants.

Cis women had higher likelihood of lifetime unwanted sexual activity than cis men.

Transgender/genderqueer individuals were more likely to have ever been homeless and had unwanted sexual activity than cis men. They were less likely to feel safe all/most of the time in the town where they currently live. Transgender/genderqueer individuals were also more likely to experience discrimination in public, in other situations, and to be called names than cis men.

Bisexual/pansexual individuals had higher likelihood of lifetime unwanted sexual activity than gay/lesbian peers.

Queer/other individuals had higher likelihood of ever being homeless than gay/lesbian counterparts.


## SUBSTANCE USE

| Ever smoked (n=547) | (\%) |  |
| :--- | ---: | ---: |
| Current smoker ( $\mathbf{n}=548$ ) | 191 | $(35 \%)$ |
| Every day | 43 | $(8 \%)$ |
| Some days | 32 | $(6 \%)$ |
| Not at all | 473 | $(86 \%)$ |
| Any alcohol use, past 30 days (n=544) | 415 | $(76 \%)$ |
| Any binge drinking, past 30 days (n=511) | 173 | $(42 \%)$ |
| Any cannabis use, past 30 days (n=527) | 111 | $(21 \%)$ |
| Any illicit drug use, past 30 days | 62 | $(11 \%)$ |

## OVERALL

A little more than one-third of survey participants had been a regular smoker at some point in their lives; however, only $14 \%$ were current smokers (i.e., every day or some days). For comparison, $17 \%$ of lowans were current smokers according to the state-wide 2016 Behavioral Risk Factor Surveillance Survey. The lower level of current smoking among participants may reflect recent tobacco control efforts that have focused on LGBTQ populations. Despite encouraging findings, no level of tobacco use is safe. Smoking prevention and cessation efforts for sexual and gender minorities should be continued.

Regarding alcohol use, the majority of participants were current drinkers, and among those drinkers nearly half reported a binge drinking episode (defined as five or more drinks on a single occasion) within the past 30 days. For comparison, $21 \%$ of lowans were reported binge drinking in the state-wide 2016 Behavioral Risk Factor Surveillance Survey. As the proportion of LGBTQ binge drinkers is twice that of the general population, alcohol risk-reduction programs are needed.

Cis women were about half as likely as cis men to report any past-month illicit drug use.

Transgender/genderqueer individuals were about half as likely as cis men to report any pastmonth illicit drug use than cis men.

There were no differences in substance use by sexual orientation sub-groups (i.e., bisexual/pansexual versus gay/lesbian and queer/other versus gay/lesbian)

## SOCIAL SUPPORT \& CIVIC ENGAGEMENT

|  | Mean | (SD) |
| :--- | ---: | ---: |
| Social support scale, range 1-5 (n=532) | 3.88 | $(0.82)$ |
| Done volunteer work or community <br> service, past 12 months | 367 | $(65 \%)$ |
| Gotten together informally to deal <br> with community problems, <br> past 12 months | 250 | (44\%) |
| Served on a local board, council, <br> or organization, past 12 months | 173 | $(31 \%)$ |
| Registered to vote (n=522) | 507 | (97\%) |

## OVERALL

On average, social support scores were moderately high, suggesting that participants had adequate resources for emotional support, tangible help, and advice when they needed it. There also appeared to be high levels of civic engagement. About two-thirds of participants reported doing volunteer work in the past year, and a little less than half said they'd gotten together informally to deal with a community problem. However, only about one-third of participants occupied a formal position on a local board, council, or organization. Nearly all participants were registered to vote.

Cis women had higher average social support scores than cis men.

Transgender/genderqueer individuals had lower average social support scores and lower likelihood of having a driver's license than cis men.

Queer/other individuals had lower average social support scores than gay/lesbian peers.

## CHARACTERISTICS OF SURVEY PARTICIPANTS

|  | n | (\%) |
| :--- | :---: | :---: |
| Gender (n=566) |  |  |
| Ciswoman | 242 | $(43 \%)$ |
| Cisman | 188 | $(33 \%)$ |
| Transgender/genderqueer | 136 | $(24 \%)$ |


| Sexual identity |  |  |
| :--- | ---: | ---: |
| Heterosexual | 8 | $(1 \%)$ |
| Gay/lesbian | 293 | $(52 \%)$ |
| Bisexual/pansexual | 114 | $(20 \%)$ |
| Queer/other | 152 | $(27 \%)$ |


| Race/ethnicity (n=519) |  |  |
| :--- | ---: | ---: |
| White, non-Hispanic | 455 | $(88 \%)$ |
| African American, non-Hispanic | 6 | $(1 \%)$ |
| American Indian/Alaska Native, | 5 | $(1 \%)$ |
| non-Hispanic | 5 | $(1 \%)$ |
| Asian/Pacific Islander, non-Hispanic | 19 | $(4 \%)$ |
| Hispanic, any race | 29 | $(6 \%)$ |


| Age $(\mathbf{n}=\mathbf{5 2 3})$ |  |  |
| :--- | ---: | ---: |
| $18-29$ years | 184 | $(35 \%)$ |
| $30-39$ years | 111 | $(21 \%)$ |
| $40-49$ years | 59 | $(11 \%)$ |
| $50-59$ years | 75 | $(14 \%)$ |
| $60+$ years | 94 | $(18 \%)$ |


| Education $(\mathbf{n}=\mathbf{5 2 3})$ |  |  |
| :--- | ---: | ---: |
| Less than HS or GED | 2 | $(<1 \%)$ |
| HS diploma or GED | 161 | $(31 \%)$ |
| Bachelors degree or higher | 360 | $(69 \%)$ |


| Employment $(\mathbf{n}=522)$ |  |  |
| :--- | ---: | ---: |
| Employed full- or part-time | 386 | $(74 \%)$ |
| Unemployed | 15 | $(3 \%)$ |
| Out of labor force | 121 | $(23 \%)$ |


|  | n | (\%) |
| :--- | ---: | ---: |
| Relationship ( $\mathbf{n}=522$ ) |  |  |
| Married/partnered | 306 | $(59 \%)$ |
| Formerly married/partnered | 34 | $(7 \%)$ |
| Single/never married | 182 | $(35 \%)$ |


| Birth place ( $\mathbf{n}=522$ ) |  |  |
| :--- | ---: | ---: |
| Iowa | 295 | $(57 \%)$ |
| Another US state (outside lowa) | 211 | $(40 \%)$ |
| Another country (outside US) | 16 | $(3 \%)$ |


| Main language spoken in household $(\mathbf{n}=523)$ |  |  |
| :--- | ---: | ---: |
| English | 505 | $(97 \%)$ |
| Spanish | 8 | $(2 \%)$ |
| Another language | 10 | $(2 \%)$ |


| Ever served in armed forces $(\mathbf{n}=520)$ |  |  |
| :--- | ---: | ---: |
| No | 480 | $(92 \%)$ |
| Yes | 40 | $(8 \%)$ |

To the research team's knowledge, this survey was only the second attempt to assess LGBTQ health status and needs in lowa. (The summary of an earlier survey is available http:// oneiowa.org/wp-content/uploads/ 2015/03/LGBT-Health-Study-2013-14. pdf) Among the current study's strengths, it benefited from an extensive questionnaire that yielded detailed data, a large sample that permitted exploration of sub-group differences, and the commitment of several key institutions to developing the knowledge base about LGBTQ health in Iowa.

## CONTACT

For questions about the survey methodology, findings, and ongoing analyses, please contact:

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In summary, the survey results showed a number of positive conditions. Majorities of participants had health insurance coverage and a personal doctor, were satisfied with recent health care visits, felt safe and accepted in the communities where they lived, were engaged in volunteer work, and reported a low prevalence of current smoking. It is important to recognize these findings as they provide a base upon which to build; but the survey also identified several problem areas that warrant attention. Overall, less than half of participants felt they were in very good or excellent health. Given high levels of depression and anxiety, efforts to improve LGBTQ health will likely require attention to mental health and related factors, such as experiences of discrimination. Results also pointed to topics that should be prioritized. For example, binge drinking was reported at twice the level of the state overall. In addition, perceptions of health care providers' knowledge of LGBTQ health issues left room for improvement. Indeed, onequarter of participants said they had had to teach a provider about LGBTQ people in order to receive appropriate health care.

Finally, the sub-group comparisons showed inequities in the larger LGBTQ community. Some groups, such as transgender/genderqueer and bisexual/pansexual individuals, were repeatedly at higher risk of poor health outcomes. Efforts to improve LGBTQ health must recognize particularly marginalized segments of the community and respond appropriately.

## POTENTIAL LIMITATIONS

There are several possible drawbacks of this study that should be acknowledged. First, the survey relied on volunteers who chose to participate rather than a random sample of people in lowa. Because of the non-probability sampling strategy, results might not truly represent LGBTQ people in Iowa. In other words, volunteers may be different from those who chose not to participate. Second, and relatedly, the survey was only offered only in English. LGBTQ people who speak other languages were unable to participate, which is an increasingly important consideration as lowa's population diversifies. Third, there were small numbers of some subgroups, which affected the statistical tests. When there are small numbers, results can be imprecise, which was often reflected in these results by wide confidence intervals for odds ratios. Fourth, the statistical tests only looked at relationships between two variables at a time (i.e., bivariate tests). More comprehensive statistical tests that take into account other factors that could affect health (for example, age or education) may yield different results. Nevertheless, the research team believes that the survey results provide useful information about the health status and needs of LGBTQ lowans. The research team will continue to analyze data and report updated findings.


lowa Cancer Consortium


[^0]:    * Adapted from Erickson-Schroth L (2011). Trans Bodies, Trans Selves: A Resource for the Transgender Community. Oxford University Press: New York NY.

