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BEST PRACTICES FOR ASKING QUESTIONS TO IDENTIFY TRANSGENDER AND OTHER GENDER MINORITY RESPONDENTS ON POPULATION-BASED SURVEYS

Created by the Gender Identity in U.S. Surveillance (GenIUSS) group, a multi-disciplinary and multi-institutional collaboration

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ABOUT THE GENIUSS GROUP AND THIS REPORT

In 2011, the Williams Institute at the UCLA School of Law convened a multi-disciplinary and multi-institutional group of experts to increase population-based data about transgender people and other gender minorities by advancing the development of sex and gender-related measures (i.e., sex assigned at birth, gender identity, gender expression, transgender status) for population-based surveys, with a particular consideration for publicly-funded data collection efforts. To achieve this goal, between 2011 and 2013 this group, known as the Gender Identity in U.S. Surveillance (GenIUSS) group, mapped the landscape of current practices to identify transgender and other gender minority respondents in population research, assessed challenges to collecting data on gender-related aspects of individual identity, and developed strategies for establishing consistent, scientifically rigorous procedures for gathering information relevant to the needs and experiences of transgender people and other gender minorities.

This report is the culmination of the work of the GenIUSS group and serves as a companion to the 2009 report from the Sexual Minority Assessment Research Team (SMART), also coordinated by the Williams Institute, entitled *Best Practices for Asking Questions about Sexual Orientation on Surveys*. In Chapter 1 of this report, we review some of the largest and most important federally-supported surveys that are top priorities for adding sex and gender-related measures to identify transgender and other gender minority respondents. Chapter 2 presents approaches to identifying transgender people and other gender minorities through surveys using measures of sex assigned at birth, gender identity, gender expression, and transgender status. Chapter 3 describes which questions may be most appropriate for different kinds of surveys, where in the survey to place these questions, and how different modes of survey administration may affect the number and validity of responses. Chapter 4 provides special considerations for data collection with sex and gender-related measures related to age, race and ethnicity, socioeconomic status, and intersex status. Finally, Chapter 5 provides an over-

view of analytic considerations, including sample size and standard error, variable construction, and aggregation of data.

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EXECUTIVE SUMMARY

WHY ASK SURVEY QUESTIONS TO IDENTIFY TRANSGENDER AND OTHER GENDER MINORITIES IN SURVEYS?

Transgender and other gender minority individuals come from a wide range of geographic and demographic backgrounds. Transgender and other gender minority people are diverse in such factors as age, race, ethnicity, income, sexual orientation, socioeconomic status, and immigration status. Despite their differences, gender minority people from all backgrounds face common experiences of discrimination in a wide array of settings across the United States today. The consequences of discrimination can be severe. According to the 2011 *National Healthcare Disparities Report*, transgender people, particularly those who are visibly gender non-conforming, are more likely to experience violence in the home, on the street, and in health care settings. Transgender and other gender minority people also report an elevated prevalence of HIV and suicide attempts.

While the existing body of research has helped policymakers, researchers, providers, and advocates begin to investigate and address these concerns, many aspects of the needs and experiences of transgender people and other gender minorities remain unexplored. Collecting population-based data on the social, economic, and health concerns of these communities is essential if federal, state, local, and nonprofit agencies are to adequately serve gender minority people and develop effective strategies for improving the circumstances of transgender and other gender minority people's lives. In particular, if transgender and other gender minority people could be identified in key federal surveys, the resulting data could provide transgender and other gender minority people with a critical tool to guide local and national discussions about policy, resource allocations, and other issues that affect them.

Key federal surveys targeted for addition of sex and gender-related measures to identify transgender and other gender minority respondents are as follows:

the American Community Survey (ACS), the Current Population Survey (CPS), the Survey of Income and Program Participation (SIPP), the National Crime Victimization Survey (NCVS), the National Health Interview Survey (NHIS), and the National Survey of Veterans (NSV). A few surveys (the Behavioral Risk Factor Surveillance System (BRFSS), the Youth Risk Behavior Surveillance System (YRBS), and the National Inmate Survey (NIS)) do have measures to identify transgender and/or other gender minority respondents, but either more consistent addition of these measures is needed across surveys administered in the states or these surveys should consider revised measures.

WHAT ARE THE RECOMMENDED APPROACHES FOR IDENTIFYING TRANSGENDER AND OTHER GENDER MINORITY RESPONDENTS IN SURVEYS?

In this report, we describe recent research by GenIUSS scholars and other researchers to design and test measures that will identify transgender and other gender minority respondents in surveys of the general population (i.e., large-scale population-based surveys). Questions that enable survey respondents to be classified as transgender or cisgender, often used in combination, include measurement of sex, gender identity, and transgender status. In population-based surveys, it is as important to accurately identify gender minority respondents through these questions as it is to minimize "false positives," which are members of the general population who might accidentally identify themselves as transgender or another gender minority. The measures listed as "recommended" in this report have tested well with both transgender and cisgender respondents. Measures listed as "promising" need further testing. Although further research is needed, particularly with more diverse, representative samples, there is sufficient evidence to include measures that classify transgender and other gender minority respondents and cisgender respondents in population-based surveys now.

THE FOLLOWING ARE APPROACHES THE GENIUSS GROUP RECOMMENDS:

1. TRANSGENDER/CISGENDER STATUS VIA THE “TWO-STEP” APPROACH

When two demographic items can be added to an adult survey (or, in most instances, a standing measure of sex replaced and a measure of current gender identity added), we recommend including measures of self-reported assigned sex at birth and current gender identity. Testing shows that the “two step” approach appears the most likely to have high sensitivity, as well as high specificity, with adults. It is unclear whether assigned sex at birth should precede or follow current gender identity on population-based surveys; future studies should investigate ordering effects.

RECOMMENDED MEASURES FOR THE “TWO-STEP” APPROACH:

ASSIGNED SEX AT BIRTH

What sex were you assigned at birth, on your original birth certificate?

- Male
- Female

CURRENT GENDER IDENTITY

How do you describe yourself? (check one)

- Male
- Female
- Transgender
- Do not identify as female, male, or transgender

PROMISING MEASURE FOR THE “CURRENT GENDER IDENTITY” STEP IN THE “TWO STEP” APPROACH (RECOMMENDED FOR FURTHER TESTING):

CURRENT GENDER IDENTITY

What is your current gender identity? (Check all that apply)

- Male
- Female
- Trans male/Trans man
- Trans female/Trans woman
- Genderqueer/Gender non-conforming
- Different identity (please state): _____

2. TRANSGENDER/CISGENDER STATUS VIA THE MA BRFSS 2013 SINGLE-ITEM APPROACH

When valid, self-report measures of assigned sex at birth and current gender identity are not on a survey and cannot be added (or replace existing measures), then the following stand-alone demographic item is recommended:

RECOMMENDED MEASURE FOR SINGLE-ITEM TRANSGENDER/CISGENDER STATUS APPROACH:

Some people describe themselves as transgender when they experience a different gender identity from their sex at birth. For example, a person born into a male body, but who feels female or lives as a woman. Do you consider yourself to be transgender?

- Yes, transgender, male to female
- Yes, transgender, female to male
- Yes, transgender, gender non-conforming
- No

Note—Additional information for telephone interviewer if asked about definition of transgender:

Some people describe themselves as transgender when they experience a different gender identity from their sex at birth. For example, a person born into a male body, but who feels female or lives as a woman would be transgender. Some transgender people change their physical appearance so that it matches their internal gender identity. Some transgender people take hormones and some have surgery. A transgender person may be of any sexual orientation – straight, gay, lesbian, or bisexual.

Note—Additional information for interviewer if asked about definition of gender non-conforming:

Some people think of themselves as gender non-conforming when they do not identify only as a man or only as a woman.

3. LGBT IDENTITY

When valid, self-report measures of assigned sex at birth and current gender identity are not on a survey and cannot be added (or replace existing measures) and a valid and separate measure of sexual orientation identity is not already on a survey and cannot be added, then the following stand-alone demographic item is recommended (without a write-in response option):

RECOMMENDED MEASURE FOR LGBT IDENTITY:

Do you think of yourself as (please check all that apply):

- Straight
- Gay or lesbian
- Bisexual
- Transgender, transsexual, or gender non-conforming

IF yes to transgender, then probe:

- Transgender or transsexual, male to female
- Transgender or transsexual, female to male
- Gender non-conforming

HOW AND WHERE SHOULD THESE MEASURES BE ADDED TO SURVEYS?

After selecting survey items appropriate for the research question and study purpose, it is next necessary to consider *how* to conduct the survey, including mode of data collection, placement of questions, and skip patterns. Careful placement, survey mode adaptations, and skip patterns may improve the quality of data about transgender and other gender minority people.

Chapter 3 provides a detailed review of these considerations and describes the following **best practices**:

- 1) We recommend asking assigned sex at birth and current gender identity questions to implement the two-step approach on population-based surveys.
- 2) When possible, we recommend placing sex and gender-related questions on self-administered portions of a survey. This method could involve inclusion of a subset of questions on a paper-and-pencil self-administered questionnaire or inclusion on a self-administered computer-assisted interview.
- 3) We recommend including sex and gender-related survey questions at the end of the standard “Demographics” section. For paper-and-pencil surveys, we recommend these questions be placed early in a survey, but not on the cover page to help ensure privacy or anonymity of respondents.

ARE THERE ANY SPECIAL CONSIDERATIONS IN USING THESE MEASURES RELATED TO AGE, RACE/ETHNICITY, SOCIOECONOMIC STATUS, AND INTERSEX STATUS?

Chapter 4 describes considerations related to age, race/ethnicity, socioeconomic status, and intersex status when designing and analyzing sex and gender-related measures. Briefly, below are descriptions of some of these considerations:

Age

We outline three additional issues to consider when collecting data from adolescents:

- 1) Transgender and other gender minority youth may not adopt alternative gender identity labels until mid- to late- adolescence, but may exhibit behavior that is gender non-conforming in childhood. Cisgender youth, particularly cisgender lesbian, gay, and bisexual youth, may also exhibit gender non-conforming behavior that places them at elevated risk of violence and harassment. When sample sizes are small and/or the goal is to identify a minority group that is at risk of negative social attention (i.e., gender non-conforming youth), then a measure of gender expression, when accompanied by a valid measure of assigned sex at birth (or current gender identity—please refer to note on page 15 of Chapter 2), may be appropriate.
- 2) Adolescents may have particular difficulties with complex vocabulary and sentences. Therefore, questions designed for adolescents should take extra care to use plain language and simple sentences. Terms used in measures of sex and gender should be defined since adolescents, and cisgender (non-transgender) adolescents in particular, conflate the terms *sex* and *gender*, and have varying understanding of the term *transgender*, *masculine*, and *feminine*.
- 3) Adolescents often lack privacy when completing surveys in schools. For this reason, we recommend that measures that make transgender or other gender minority youth identifiable not be placed at the beginning of surveys when peers are likely to be responding to the same survey items at the same time.

Given these considerations, Chapter 4 provides recommended and promising approaches for measuring gender expression, transgender status, and sex assigned at birth among adolescents.

Race/Ethnicity

While some research has examined whether there are differences in response to measurement items on LGBT identity items associated with race or ethnicity, there has been limited analysis of whether known community-level differences in nomenclature and terminology related to self-identity influences the accuracy and sensitivity of measures that can be used to identify transgender and other gender minority people of color. In Chapter 4, we describe

how minority stress affects transgender and other gender minority people of color in disparate ways, but gaining a fuller understanding of this disparate impact will only be advanced through large, ongoing surveys where data may be aggregated over time and across place. Further, we discuss issues regarding data analysis, measures for Spanish-language surveys based on research in Puerto Rico, and future research needs.

Socioeconomic Status (SES)

Social and economic marginalization is an unfortunate reality for many transgender and other gender minority people. Socioeconomic disparities are an important consideration due to the methodological implications for the science of understanding the health, epidemiology, and demography of gender minority populations. First, ensuring that low SES, vulnerable gender minority communities are “counted” is key to addressing the social determinants of health and to getting a fuller picture of the population health of transgender and other gender minority people. Second, if transgender and other gender minority people are disproportionately not living in traditional housing units typically considered for inclusion in population-based surveys (i.e., if they are homeless or unstably housed), then they are less likely to be included in those surveys. This situation creates selection bias whereby the sampling strategy disproportionately captures gender minority respondents who have higher SES, thus under-representing lower SES individuals in that population. Multiple sampling strategies and multiple survey modes, described in Chapter 4, may improve data collection efforts and accuracy.

Intersex Status

Three major issues in identifying intersex people/people with DSDs on surveys are as follows: First, some intersex people/people with DSDs do not identify with the term “intersex” as an identity or gender identity. Therefore, including the term “intersex” in questions that utilize a list of gender

identity terms may not capture all intersex people/people with DSDs. Second, “Intersex” is sometimes used as an identity among people who do not have intersex traits/DSDs. Therefore, researchers must utilize measures that will clearly identify respondents from the population of interest. Finally, “intersex” is not included as an option for sex entered on birth certificate forms. Therefore, items asking assigned sex at birth should not include intersex as an answer option. In Chapter 4, we discuss some potential measures that could be tested to identify intersex people/people with DSDs on surveys.

ARE THERE ANY CONSIDERATIONS REGARDING ANALYSIS OF THESE MEASURES?

The relatively small samples usually associated with transgender and other gender minority populations coupled with distinctive issues associated with the measurement of sex and gender on surveys create a variety of analytical challenges for researchers. Chapter 5 summarizes some of these challenges and, where possible, identifies analytical strategies to improve the accuracy and validity of analyses. These strategies include the creation of a larger sample by routine administration of the same survey that allows aggregation of data over time and across survey locations. This type of aggregation can yield relatively large samples of transgender and other gender minority respondents that allow for nuanced analyses. The recommended “two-step” approach, described in Chapter 2, is particularly important since this approach is designed to capture the nuance of various subcategories of the gender minority population, which may otherwise be lost. A sample analysis of a “two-step” approach to identifying transgender and other gender minority respondents is provided in Chapter 5. Overall, we recommend using the most specific and detailed measures of sex and gender as are possible given the design and analysis plans of any particular survey.

GLOSSARY

CISGENDER

“Cis” is the Latin prefix for “on the same side” (Schilt & Westbrook, 2009). Cisgender refers to individuals whose gender identity matches their sex assigned at birth (Schilt & Westbrook, 2009; Green, 2006). “Cisgender” is a complementary concept to “transgender” and is used instead of “non-transgender” (Schilt & Westbrook, 2009). A person assigned male at birth who identifies as male is cisgender. A person assigned female at birth who identifies as female is cisgender. This definition does not preclude the possibility that cisgender people may be gender non-conforming.

GENDER, GENDER IDENTITY, AND GENDER EXPRESSION

Gender is a multidimensional construct that has psychological, social, and behavioral dimensions that include gender identity and gender expression. Gender identity refers to a person’s internal sense of gender (e.g., being a man, a woman, or genderqueer) and potential affiliation with a gender community (e.g., women, trans women, genderqueer). Gender expression is a behavioral dimension of gender, that is, how one expresses one’s identity through appearance and behavior (Spence, 2011). Gender may be reported in terms of a person’s felt, desired, or intended identity and expression, as well as how an individual believes that he or she is perceived by others.

GENDER MINORITY

Gender minority is an “umbrella” term that refers to transgender and gender non-conforming people—people whose current gender identity or gender expression do not conform to social expectations based on their sex assigned at birth (i.e., natal sex) (IOM, 2011).

GENDER NON-CONFORMING / GENDERQUEER

The term gender non-conforming refers to individuals whose gender expression does not fully conform to sex-linked social expectations (e.g., masculine girls/women, feminine boys/men). Gender non-conforming people may identify with the term transgender, trans, transsexual or any number of related community-created terms, or with an alternative, non binary identity (e.g., as genderqueer), or may have no self-concept related to their gender expression.

INTERSEX / DIFFERENCES OF SEX DEVELOPMENT

Intersex people are born with (or develop naturally in puberty) genitals, reproductive organs, and/or chromosomal patterns that do not fit standard definitions of male or female (OII-USA, 2013). In the United States, intersex infants and minors are often (but not always) diagnosed with a medically-determined intersex condition or “Difference of Sex Development” (DSD) (Hughes et al., 2006). However, some people use the term “intersex” as an identity label, sometimes even in the absence of such inborn physical characteristics.

POPULATION-BASED DATA

Data collected using sampling procedures that allow for analyses and statistical inferences that can be generalized to a population.

PURPOSIVE / CONVENIENCE / COMMUNITY-BASED SAMPLE

Data collected using sampling procedures that are not designed to provide statistical inference that can be generalized to a population. Purposive samples are often designed to study small or hard-to-reach/identify populations and provide a more thorough understanding of the specific needs or concerns of those populations.

SEX

The term sex refers to biological differences among male, female, and intersex people (hormones, secondary sex characteristics, reproductive anatomy) that can be altered over time through the use of hormones and surgical interventions (Krieger, 2003). The assignment of individuals to a sex category by medical practitioners at birth is typically based on the appearance of external genitalia. Assigned sex at birth is then recorded on the birth certificate as male or female. The sex marker can sometimes be changed on legal documents (i.e., driver's license, passport, birth certificate) through a complex set of legal procedures (Conron, Landers, Reisner, & Sell, in press).

TRANSGENDER / TRANS

Transgender describes individuals whose current gender identity is not fully congruent with their assigned sex at birth (USDHHS, 2011; Feinberg, 1996). Some individuals who fit this definition may identify with the term transgender while others, particularly some transsexual individuals, may not. Many use the shorthand "trans" in place of "transgender."

TRANSGENDER MEN / TRANS MEN

These terms refer to persons who were assigned female at birth and identify as men, regardless of whether they have physically transitioned from female to male.

TRANSGENDER WOMEN / TRANS WOMEN

These terms refer to persons who were assigned male at birth and identify as women, regardless of whether they have physically transitioned from male to female.

TRANSITION

This term refers to a process (social and/or medical) where one undertakes living in a gender that differs from the sex that one was assigned at birth. In a physical gender transition, individuals seek to alter their primary and/or secondary sex characteristics through femininizing or masculinizing medical interventions (hormones and/or surgery), typically accompanied by a permanent change in gender role (Coleman et al., 2011). According to the current standards of care, transition is considered medically-necessary when clinically indicated for an individual (Coleman et al., 2011).

TRANSSEXUAL

A term used, often by medical providers, to describe individuals who seek to change or who have changed their primary and/or secondary sex characteristics through femininizing or masculinizing medical interventions (hormones and/or surgery), typically accompanied by a permanent change in gender role (Coleman et al., 2011). The term transsexual is used by some individuals as an identity label.

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ABBREVIATIONS USED IN THIS REPORT

- ACASI:** Audio computer-assisted self-administered interviews
- ACS:** American Community Survey
- AUDIO-SAQ:** Audio self-administered questionnaires
- BRFSS:** Behavior Risk Factor Surveillance System
- C-CASI:** Color-coded audio-computer assisted self-interviews
- CAPI:** Computer-assisted personal interviews
- CASI:** Computer-assisted self-administered interviews
- CDC:** Centers for Disease Control and Prevention
- CPS:** Current Population Survey
- DSD:** Difference of sex development
- eHARS:** Enhanced HIV/AIDS Reporting System
- eHR:** Electronic health record
- FOA/RMA:** Funding Opportunity Announcement/Request for Application
- FTM:** Female to male
- GLSEN:** Gay, Lesbian & Straight Education Network
- IOM:** Institute of Medicine
- IVR:** Interactive voice response
- LGB:** Lesbian, gay, and bisexual
- LGBT:** Lesbian, gay, bisexual, and transgender
- LGBTT:** Lesbian, gay, bisexual, transgénero, and transsexual (used in Puerto Rico)
- MTF:** Male to female

- NCHS:** National Center for Health Statistics
- NCTE:** National Center for Transgender Equality
- NCVS:** National Crime Victimization Survey
- NGLTF:** National Gay and Lesbian Task Force
- NHANES:** National Health and Nutrition Examination Survey
- NHIS:** National Health Interview Survey
- NIBRS:** National Incident-Based Reporting System
- NIH:** National Institutes of Health
- NSV:** National Survey of Veterans
- NTDS:** National Transgender Discrimination Survey
- PAPI:** Paper and pencil personal interviews
- SAQ:** Self-administered questionnaires
- SES:** Socioeconomic status
- SIPP:** Survey of Income and Program Participation
- SMART:** Sexual Minority Assessment Research Team
- SMART BRFSS:** Selected Metropolitan/Micropolitan Area Risk Trends BRFSS questionnaire
- SNAP:** Supplemental Nutrition Assistance Program (formerly food stamps)
- T-ACASI:** Telephone audio computer-assisted self-interviewing
- TANF:** Temporary Assistance for Needy Families
- UCR:** Uniform Crime Reporting
- YRBS:** Youth Risk Behavior Surveillance System

WHY DATA COLLECTION ON POPULATION-BASED SURVEYS IS NEEDED TO IMPROVE TRANSGENDER AND OTHER GENDER MINORITY PEOPLE'S HEALTH

A LETTER TO GENDER MINORITY COMMUNITIES FROM THE GENIUSS GROUP

We are people who know, from personal experience and academic research, that transgender and other gender minority people face many challenges. We know from our own experience that discrimination and prejudice hurt us. They hurt our health. They hurt our social well-being. They hurt our ability to be financially secure. These problems affect us individually; they also affect our communities. For the well-being of ourselves and our communities, we need many different kinds of statistics to understand these problems.

The U.S. government funds ongoing research to document the health and well-being of U.S. residents. This research has not documented transgender and other gender minority people separately. As a result, it has been difficult for us to document how many transgender and other gender minority people exist and how discrimination and prejudice affect us. We urge U.S. government agencies that run this research to add questions that will help us learn more about these problems.

Transgender and other gender minority people and our allies already know about these problems. We have done surveys within our communities; some of them are at the local and state level. Others, like the National Transgender Discrimination Survey, are at the national level. These studies are important for showing what we already know from our own experiences, but they are not the same as large, publicly-funded surveys. Large, publicly-funded surveys help governments make decisions about where to invest public money.

Scholars often call these large, publicly-funded surveys "population-based surveys" because they try to study a representative sample of the entire population. For example, a population-based survey of adults in the U.S. might randomly select households from all around the country and invite a person in the household to complete a survey -- perhaps in person or over the telephone. Population-based surveys tend to collect basic information about the whole group of people they survey. This means that population-based surveys typically include general questions that apply to most people. They are not able to include questions about the specific experiences of any one community, like transgender and other gender minority people.

Community-based surveys are different. They collect many details about the experiences and diversity of a particular community. Community-based surveys give us important, detailed information about transgender and other gender minority communities. Community-based surveys and population-based surveys have different strengths and limitations. We need both kinds of surveys.

This report focuses on population-based surveys, not community-based surveys. In writing this report, we recommend some questions for use in population-based surveys. This report will help transgender and other gender minority people and our allies by helping make our needs visible to researchers and the people who create government budgets. This report contains our best current recommendations for questions about transgender and other gender minority people that can be added to large, publicly-funded surveys.

The survey questions recommended in this report are multiple-choice questions with limited answer options. Population-based surveys have to use multiple-choice questions; fill-in-the-blank questions do not work for surveys that include tens of thousands of people. We recognize that multiple-choice questions have significant limits. They can't capture the complexity of human identities and experiences in several important categories, especially race/ethnicity, disability, sexual orientation, and gender identity or expression. Even so, it's important to have the best possible multiple-choice questions for population-based surveys.

One reason that population-based surveys use multiple-choice questions is that questions used to identify minorities are phrased in ways that people in the majority group will understand. Cisgender (non-transgender) people are in the majority. If a population-based survey asks a question that leads even a small percentage of cisgender people to answer surveys incorrectly (as if they were transgender or another gender minority), the survey will miscount the number of transgender and other gender minority people. This result is called a "false positive," and survey questions that give lots of false positives cannot be used for surveys if we want the results to be accurate and taken seriously by policymakers.

The questions we recommend are intended to be easy for cisgender people to answer accurately; they also allow transgender and other gender minority people to make ourselves visible in population-based surveys. These questions allow us to give answers that recognize differences between our assigned sex at birth and our current gender identity or gender expression. They allow people who do not identify solely as men or women, or who have another non-binary gender expression, to make that clear when responding to surveys.

Finally, we know that these questions will change over time, just as transgender and other gender minority communities will. Over generations, survey questions about race and disability have also changed. We view this report and our recommendations as one important step in making population-based surveys better. These questions will help make the needs of transgender and other gender minority people visible to policymakers who use population-based surveys to make decisions. They will also help government officials who set budgets and funding priorities to understand the needs of transgender and other gender minority people and allocate resources (e.g., time, money) appropriately.

These questions are a step towards making transgender and other gender minority people visible and countable in nationwide surveys. Being countable—including our gender identity and gender expression—is an important step for having the resources we need to live healthy, safe, financially stable lives.

CHAPTER 1

IDENTIFYING TRANSGENDER AND OTHER GENDER MINORITY RESPONDENTS ON POPULATION-BASED SURVEYS: WHY ASK?

Kellan E. Baker, MA, MPH

Transgender and other gender minority individuals, like any group of people, come from a wide range of backgrounds. They live in cities and rural areas; are young, elderly, and middle-aged; began to live as their true gender when they were children, young adults, or much later in life; and live in families of all varieties. Gender minority people, and the communities they live in, are also diverse in such factors as race, ethnicity, income, sexual orientation, and immigration status.

Despite their differences, gender minority people from all backgrounds face common experiences of discrimination in a wide array of settings across the United States today. In a U.S. nationwide survey of more than 6,400 transgender and other gender minority people conducted in 2008, respondents reported frequent experiences of prejudice, violence, and institutionalized discrimination in areas of everyday life such as healthcare, housing, employment, education, and legal gender recognition (Grant et al., 2011). These disparities are exacerbated for those who are also members of other disadvantaged groups, such as transgender people of color and transgender women.

The consequences of discrimination can be severe. According to the 2011 *National Healthcare Disparities Report*, transgender people, particularly those who are visibly gender non-conforming, are more likely to experience violence in the home, on the street, and in healthcare settings. Many transgender and other gender minority people live in extreme poverty and lack health insurance coverage (Grant et al., 2011). Studies have also found that transgender people have an elevated prevalence of HIV and suicide attempts (Herbst et al., 2008; Clements-Nolle, Marx & Katz, 2006).

While the existing body of research has helped policymakers, researchers, providers, and advocates begin to investigate and address these concerns, many aspects of the needs and experiences of transgender people and other gender minorities remain unexplored. Collecting population-based data on the social, economic, and health concerns of these communities is essential if federal, state, local, and nonprofit agencies are to adequately serve gender minority people and develop effective strategies for improving the circumstances of transgender and other gender minority people's lives.

This report focuses on sex and gender-related measures appropriate for large-scale population-based surveys that can be used to identify transgender and other gender minority respondents.¹ Adding sex and gender-related measures to population-based surveys can provide critically-needed data resources that help to identify and quantify the needs of and disparities experienced by gender minority populations. In particular, identifying transgender and other gender minority populations on publicly-funded population-based surveys generally ensures broader access to data by scholars and policymakers. Moreover, this step would also reflect Objective 1.2 in the LGBT Health Topic Area of Healthy People 2020, which is to increase the number of population-based data systems used to monitor Healthy People objectives that include in their core a standardized set of measures to identify transgender populations.

This chapter reviews some of the largest and most important federally-supported population-based surveys and presents them in two groups: top-priority surveys with no measures to identify transgender or other gender minority respondents, and top-priority surveys that do include some form of a measure to

identify transgender and/or other gender minority respondents. These surveys, along with many others not described in detail in this report, provide a key opportunity to gather baseline demographic information about the gender minority population in the U.S., monitor the well-being of this population, and evaluate the impact of policy and other changes across fields of inquiry where disparities in health and well-being have been documented, including education, employment, health, and other areas.

TOP-PRIORITY SURVEYS WITH NO MEASURES TO IDENTIFY TRANSGENDER OR OTHER GENDER MINORITY RESPONDENTS

As of the writing of this report, the majority of federally-supported population surveys currently do not include measures that can be used to identify transgender or other gender minority respondents. Including sex and gender-related measures on these surveys is critical to understanding disparities and monitoring the well-being of the gender minority population. Top-priority surveys for the inclusion of these measures are the American Community Survey (ACS), the Current Population Survey (CPS), the Survey of Income and Program Participation (SIPP), the National Crime Victimization Survey (NCVS), the National Health Interview Survey (NHIS), and the National Survey of Veterans (NSV).

American Community Survey

The American Community Survey, or ACS, is the premier population-based source of information about the geographic, demographic, and socioeconomic characteristics of the U.S. population. The Census Bureau conducts this survey every year among a sample of more than 3.5 million households, generating data that guide the priorities of public and private agencies throughout the country, determine the allocation of hundreds of billions of federal and state resource dollars among programs and services in communities across the country, and help develop

sampling frames for other major federally-supported surveys.

ACS data are also used for the monitoring and enforcement of various laws that have particular relevance for transgender and other gender minority people. These laws include the Civil Rights Act, which provides protection from employment discrimination on the basis of sex and, according to a growing nationwide body of judicial and regulatory decisions, gender identity and sex stereotyping (see, e.g., EEOC, n.d.).

The ACS asks questions about a wide range of demographic factors, including race, sex, and disability status, but it does not currently include measures to identify transgender or other gender minority respondents. The ability to explicitly identify gender minority individuals on the ACS would substantially improve the ability of government agencies, legislatures, researchers, and community-based organizations to develop policies and programs designed to eliminate disparities in health and well-being that have been identified in the transgender and other gender minority population.

Current Population Survey

The Current Population Survey, or CPS, is a population-based survey that provides the data used for most official labor force statistics in the United States. The Census Bureau and the Bureau of Labor Statistics jointly administer the CPS on a monthly basis among a sample of 60,000 households, and the data are widely used to study and report on employment and unemployment trends, factors affecting labor force participation, and trends in wages and earnings.

Specific programmatic uses of CPS data include implementation of the Civil Service Reform Act of 1978, where the demographic data collected through the CPS are used to assess under-representation among

¹ There are many other ways to collect data to assess the experiences of gender minority people and monitor the well-being of the this population, including electronic health records, administrative data such as the data collected by government agencies to monitor compliance with civil rights laws, public and private research studies, and non-representative surveys in areas such as employee diversity and patient satisfaction in healthcare settings. See, for example, http://thefenwayinstitute.org/wp-content/uploads/COM228_SOGI_CHARN_WhitePaper.pdf and the IOM EHR report (www.iom.edu/lgbtda-ta).

minority groups in the federal workforce. Assessments based on CPS data also serve as the basis for regulations implementing Equal Employment Opportunity Commission (EEOC) guidelines on civil service anti-discrimination measures and assistance to agencies in carrying out workforce recruitment.

Transgender and other gender minority individuals cannot currently be explicitly identified on the CPS. The documented scope of workplace discrimination against transgender and other gender minority people, however, as well as the prominence of transgender employment issues in the national legislative and regulatory arenas, underscores the importance of better understanding the employment experiences and socioeconomic profile of the gender minority population.

Survey of Income and Program Participation

The Survey of Income and Program Participation, or SIPP, is a population-based survey that collects information on the economic position, income, and program participation of individuals and families in the U.S. The Census Bureau administers the SIPP to a panel of 37,000 households on a recurring basis for four years, which allows the survey to identify dynamic trends over time in income levels, family composition, labor force participation, and interaction with government programs such as Temporary Assistance for Needy Families (TANF), Medicaid, Social Security, and the Supplemental Nutrition Assistance Program (SNAP).

SIPP data also allow state and federal government agencies to explore how income and wealth patterns vary based on different demographic characteristics, assess how government programs can focus on helping populations most in need, and analyze the effect of eligibility rules on particular subpopulations.

Like the CPS, the SIPP does not allow for explicit identification of transgender or other gender minority individuals, despite evidence pointing to elevated rates of poverty among this population (Badgett et

al., 2007; Grant et al., 2011). Moreover, further investigation is needed into the barriers that transgender people may encounter when attempting to access social safety net programs for which they are eligible, as numerous organizations in the field have reported anecdotal evidence of transgender people being denied access to participation in government-sponsored activities on the basis of a lack of appropriate legal identification (Grant et al., 2011).

National Crime Victimization Survey

The National Crime Victimization Survey, or NCVS, is the primary source of self-reported information on criminal victimization across the country. Through the NCVS, the Bureau of Justice Statistics surveys approximately 75,000 people in 40,000 households annually to gather population-based data for use in projections of the likelihood of victimization by crimes such as assault, rape, and robbery for the population as a whole, as well as for segments of the population based on age, sex, race/ethnicity, and geography. NCVS data provide a basis for analyzing crime trends in the United States and guide policy and decision-making throughout the American criminal justice system. The NCVS also provides an opportunity for victims to describe the impact of crime on their lives.

In partnership with the National Center for Education Statistics, the NCVS School Crime Supplement surveys 6,500 students ages 12 to 18 nationwide approximately every two years. The School Crime Supplement is the federal government's major source of information about incidents of bullying, substance use, and crime on school campuses, as well as fear and avoidance behaviors among students and student perceptions of school climate and safety in both public and private schools.

The NCVS does not currently include measures that permit explicit identification of transgender or other gender minority respondents. In light of the prevalence of experiences of violence documented by Grant et al., (2011) and others (e.g., Lombardi et

al., 2008) among transgender people, the NCVS and the School Crime Supplement are high priorities for the addition of sex and gender-related measures to gather information about bias-related crimes, violence, and bullying targeting transgender and other gender minority individuals.

National Health Interview Survey

The National Health Interview Survey, or NHIS, is the primary source of information on the health of the civilian non-institutionalized population of the United States. The population-based survey, which is fielded annually to a sample of approximately 87,500 people in 35,000 households, is the flagship data collection instrument of the National Center for Health Statistics (NCHS).

Among other uses, demographic data collected through the NHIS are used to track progress toward national Healthy People objectives, provide a benchmark for federal and state programs to assess progress toward health disparity reduction goals, and serve as a basis for policy decisions on coverage and reimbursement levels by programs such as Medicare and Medicaid. NHIS data are also used to measure the effects of larger social trends or policies affecting health outcomes, such as the health insurance coverage reforms introduced by the Affordable Care Act (Sommers, 2012).

In 2013, the Department of Health and Human Services added a sexual orientation question to the NHIS. These data will allow for investigation of the differential effect that health-related laws, policies, and programs may have on lesbian, gay, and bisexual populations. Including sex and gender-related measures that identify transgender and other gender minority individuals would similarly provide critical data about this population.

National Survey of Veterans

The National Survey of Veterans, or NSV, is a population-based survey conducted by the National Center for Veterans Analysis and Statistics to assess characteristics of the American veteran population. In 2010 the survey analyzed responses from a sample of approximately 11,000 individuals that included vet-

erans, active duty service members, and demobilized National Guard and Reserve members.

Data from the NSV guide decisions at the Department of Veterans Affairs regarding policies and allocation of resources among programs and services. The 2010 survey also incorporated a substantial focus on awareness among veteran respondents of the benefits and services available through the department.

Studies have found that the reported prevalence of gender identity disorder, the psychiatric diagnosis associated with a transgender status, is five times higher in the records of the Veterans Health Administration than among the general population (Blosnich et al., 2013). The NSV, however, does not currently include a measure to identify transgender or other gender minority respondents. The apparent size of the transgender veteran population, as well as public debate about the appropriateness of the ban on military service by transgender individuals (Elders et al., 2014), indicates that measures are needed on the NSV to learn more about the experiences of transgender veterans.

TOP-PRIORITY SURVEYS WITH MEASURES TO IDENTIFY TRANSGENDER AND/OR OTHER GENDER MINORITY RESPONDENTS

As of the writing of this report, these top-priority surveys currently do include measures to identify the transgender population and/or other gender minorities: the Behavioral Risk Factor Surveillance System (BRFSS), the Youth Risk Behavior Surveillance System (YRBS), and the National Inmate Survey (NIS). The inclusion of sex and gender-related measures in these surveys is an important step toward effectively addressing disparities in health and well-being associated with gender minority status. These measures also offer important insights into how to develop and deploy measures on population surveys designed to identify transgender and other gender minority respondents. As is generally the case for population-based survey measures, these measures will need to continue to be refined in order to most accurately reflect various and emerging gender identities

and correctly identify transgender and other gender minority respondents.

Behavioral Risk Factor Surveillance System

The Behavioral Risk Factor Surveillance System, or BRFSS, is an extensive nationwide system of population-based surveys that collect data from a sample of approximately 500,000 adults about health-related risk behaviors, health conditions, and preventive services. Although the Centers for Disease Control and Prevention (CDC) at the Department of Health and Human Services oversee the design of the core BRFSS question module, each state administers the BRFSS.

Federal, state, local, and tribal governments use BRFSS data to establish and track long-term health objectives and programs, monitor trends in public health, and support health-related legislative efforts. New uses of BRFSS data, such as the Selected Metropolitan/Micropolitan Area Risk Trends (SMART) BRFSS questionnaire, are intended to support micro-targeted program implementation and evaluation and to guide cities in planning and directing preventive health efforts.

The large size of the BRFSS and its responsiveness to emerging health issues make it a key survey for understanding health disparities for transgender people and other gender minorities and appropriately targeting programming and other resources. In 2013, the Department of Health and Human Services began recommending a measure that states can use on their BRFSS questionnaires to collect data about the health status and healthcare experiences of transgender respondents (the module also includes a question about sexual orientation). As of July 2014, HHS indicates that 17 states have reported that they will use this module on their next BRFSS questionnaire, and an additional 13 states have indicated that they will use the module with their own modifications (see, e.g., Virginia Department of Health, 2014). The module's measure, which is a single-item measure to assess transgender status, is discussed in detail in Chapter 2.

Youth Risk Behavior Surveillance System

The Youth Risk Behavior Surveillance System, or YRBS, is the youth corollary of the BRFSS. Like the BRFSS, the YRBS has three components: a federal core, CDC-approved modules that states can opt to use, and a variety of state-added questions. The YRBS is fielded in a wide range of jurisdictions every two years, predominantly among students in 9th through 12th grades. Between 1991 and 2013, the YRBS collected data from more than 2.6 million high school students.

The size and scope of the YRBS make it the leading source of information on the health, well-being, and risk behaviors of young people in the U.S. The YRBS investigates several indicators that are of particular importance for the health and well-being of transgender and other gender minority youth, including experiences of bullying and violence, sexual health and sexual behavior, and tobacco use. Further, the YRBS aims to provide data that allow for comparisons among subpopulations of youth, including sexual and gender minority youth.

Like the BRFSS, the state-driven design and flexibility of the YRBS has offered opportunities for various jurisdictions to begin including sexual orientation and sex and gender-related measures. Thanks to optional sexual orientation and behavior modules that have been fielded by a number of states, the YRBS is the source for some of the most comprehensive data to date on the health and well-being of LGB adolescents (Kann et al., 2011), and the CDC has also approved an optional gender expression measure. This measure is discussed in more detail in Chapter 4.

National Inmate Survey

The National Inmate Survey, or NIS, was created as part of the National Prison Rape Statistics Program at the Bureau of Justice Statistics to provide more detailed information regarding the issue of sexual victimization within jails and prisons. The population-based survey samples inmates from state and federal adult confinement facilities identified in the

2005 Census of State and Federal Adult Correctional Facilities.

The NIS asks inmates about incidents that occurred in the previous 12 months of their incarceration. To provide participants with the opportunity to disclose sensitive information without having an interviewer monitor their responses, the survey utilizes an audio computer-assisted self-interview (audio-CASI) and is conducted so that all responses are confidential.

Many transgender and other gender minority people experience sexual assault and other forms of violence and victimization within jails and prisons (Grant et al., 2011; National Center for Transgender Equality, 2012). To begin to better understand the experiences of these inmates, the most recent NIS included a measure to attempt to identify transgender respondents. However, this single-item measure merges transgender status with sex in a manner that has been shown to capture only half as many respondents as the two-step measure, which is discussed in detail in Chapter 2 (Schilt & Bratter, 2015).

CONCLUSIONS

Demographic and other data are crucial markers of social value and inclusion in our information-rich age. Data provide transgender and other gender minority people with a critical tool to guide local and national discussions about policy, resource allocations, and other issues that affect them. This report provides examples of current practices that can help researchers and policymakers determine how to deploy measures on population surveys to identify transgender and other gender minority respondents and to gather data that can inform the development of policies and programs to effectively address issues of concern for the gender minority population.

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CHAPTER 2

IDENTIFYING TRANSGENDER AND OTHER GENDER MINORITY RESPONDENTS ON POPULATION-BASED SURVEYS: APPROACHES

Kerith Conron, ScD; Emilia Lombardi, PhD; Sari Reisner, ScD

While transgender and other gender minority people no doubt participate in a wide range of population-based surveys, they are almost always invisible due to the absence of sex and gender-related measures that would allow them to be identified. This exclusion makes it impossible to compare outcomes between gender minority individuals and their cisgender (non-transgender) and gender conforming counterparts. Questions that enable survey respondents to be classified as transgender or cisgender, often used in combination, include measurement of sex, gender identity, and transgender status. Survey respondents can also be characterized along a continuum of gender conformity/non-conformity on the basis of responses to questions about sex or gender identity paired with a question about gender expression. Which questions to ask in order to produce data about the health needs and socioeconomic characteristics of transgender and other gender minority respondents depends on factors including the purpose of data collection, outcomes of interest, populations to which one wishes to generalize and assess, measures already included in surveys, and sample size considerations. This chapter provides an overview of promising measures and measurement approaches that can provide important insights in the process of selecting an appropriate measure for use in a specific survey setting.

MEASUREMENT APPROACHES AND MEASURES (SURVEY ITEMS)

What is assessed: Transgender/cisgender status via the “two-step approach”
Required measures: Assigned sex at birth and current gender identity

Collecting information about assigned sex at birth (male or female) and current gender identity (e.g.,

man, woman, transgender) is often referred to as the “two-step” method or approach because it uses two questions to classify respondents as transgender (discordant responses) or cisgender (concordant responses). This approach was first developed in 1997 by the Transgender Health Advocacy Coalition, a community-based organization, for use on a survey of transgender people in Philadelphia (Singer, 1997). These measures were then adapted for the Washington Transgender Needs Assessment Survey and the Virginia Transgender Health Information Study (Xavier, 2000; Xavier et al., 2007). A 2012 study found that the “two-step” approach was far more successful in identifying transgender respondents than a single, stand-alone gender identity item that offered a transgender response option (e.g., male, female, transgender, other) (Tate et al., 2012). Importantly, this study found that some transgender individuals identify their gender as male (or female) and not as transgender and, thus, will be missed if a gender identity measure is used alone (Tate et al., 2012).

Since 2007, the Center of Excellence for Transgender Health at the University of California at San Francisco has advocated for the use of a “two-step” question protocol in healthcare settings where data are collected by a second party (e.g., a health provider). The current Center for Excellence protocol recommendation entails starting with a measure of current gender identity, followed by a question about sex assigned at birth. Together, these two items (shown below) aim to collect information about the current gender in which the individual is living and functioning socially, and when used in a healthcare setting, enable providers to offer appropriate health

screenings. These items, and the order in which they are presented, have not yet been tested for use on self-reported surveys using either qualitative

cognitive testing methods or quantitative methods to assess validity (Sudman et al., 1996; Warnecke et al., 1997).²

1. What is your current gender identity?³ (Check all that apply)

- Male
- Female
- Trans male/Trans man
- Trans female/Trans woman
- Genderqueer/Gender non-conforming
- Different identity (please state): _____

2. What sex were you assigned at birth, meaning on your original birth certificate?

- Male
- Female

Reisner and colleagues evaluated a “two-step” approach among a sample of young adults in their mid-twenties to mid-thirties with the following items (Reisner et al., n.d.):

1. What sex were you assigned at birth, on your original birth certificate?

- Female
- Male

2. How do you describe yourself? (check one)

- Female
- Male
- Transgender
- Do not identify as female, male, or transgender

² In 2011, the U.S. Centers for Disease Control and Prevention added both sex and gender identity data elements to the U.S. HIV/AIDS surveillance system, including the Adult Case Report Form, as well as its electronic surveillance system -- the Enhanced HIV/AIDS Reporting System (eHARS). See Centers for Disease Control and Prevention, National Center for HIV/AIDS, Viral Hepatitis, STD, and TB Prevention, Division of HIV/AIDS Prevention. HIV among Transgender People. August 2011, available from <http://www.cdc.gov/hiv/transgender/pdf/transgender.pdf>. While a significant step towards improved data reporting, the inclusion of these data elements in the reporting repository systems may not reflect the questions asked on primary data collection forms.

³ **Note Regarding “Intersex” as an Answer Option:** “Intersex” is not included as an option for sex on birth certificate forms; therefore, items asking assigned sex at birth should not include intersex as an answer option. It is unclear who would identify with an intersex gender identity category since some intersex people/people with Differences of Sex Development (DSD) do not identify their gender in this way and others who have no physical intersex condition or DSD do identify their gender in this way; therefore, researchers should utilize measures that will clearly identify respondents from the population of interest. See Chapter 4 for a more thorough discussion of these issues and suggestions for further research on measures to identify intersex people/people with DSDs in surveys.

Cognitive testing with interview participants (N=39), both cisgender (n=30) and transgender (n=9), revealed the items to be easy to understand and the response options acceptable. Quantitative analyses (n=7,833) provided evidence in support of the construct validity of this measurement approach; childhood and current (adult) gender non-conformity scores/values were both higher among those classified as transgender than cisgender, providing support for the transgender/cisgender classification yielded by the two-item measurement approach.

Lombardi and colleagues evaluated a “two-step” approach in a Midwestern adult sample using these items (Lombardi et al., n.d.):

1. What is your sex or gender? (check all that apply)
 - Male
 - Female
 - Other: please specify _____

2. What sex were you assigned at birth? (check one)
 - Male
 - Female
 - Unknown or question not asked
 - Decline to state

Cognitive testing interview participants (N=50), both cisgender (n=25) and transgender (n=25) and predominately white, recruited from Cleveland and Akron, Ohio, found the assigned sex at birth item easy to answer and no respondent selected unknown or declined to state response options. Transgender respondents viewed sex and gender as different and having both in the same question (question 1) was problematic for them; however, all respondents referred to their gender identity when providing an answer. Several transgender respondents (n=9) opted to use the other, write-in response

Importantly, this study compared a self-reported assigned sex at birth measure to other data collected from the respondents’ mothers, who provided the sex at birth of the respondent and found complete agreement. Given that the sample was somewhat homogeneous on race-ethnicity and educational attainment (predominately white and well-educated), and accustomed to completing surveys as participants in a longitudinal cohort study, the authors recommend additional testing in diverse samples.

option, including four who also selected male or female options, suggesting that the current question configuration will require additional resources and expertise to code qualitative responses. Some cisgender respondents viewed the question pair as redundant; however, perceived redundancy did not lead to non-response in the study sample. Cisgender respondents answered both sets of items as expected (consistent male/male or female/female responses).

What is assessed: Transgender/cisgender status via the MA BRFSS approach**Required measure: Transgender status**

In 2007, Massachusetts added a single-item transgender status question to its Behavioral Risk Factor Surveillance System survey (MA-BRFSS). The BRFSS is a national collaborative health surveillance effort between the CDC and state departments of public health. Each year, a household sample of adults who can be reached by telephone is drawn using random digit dial methods. Topics such as health insurance coverage, cancer screening, and sexual behavior are assessed with core questions provided by the CDC.

States may add supplemental questions to their own state survey. Neither sex nor gender are directly measured on the BRFSS, but, rather, are noted by the telephone interviewer (as sex) and confirmed with the respondent if needed. Given the absence of valid, self-report measures of assigned sex at birth and current gender identity, a single item measure that would permit respondents to be classified as transgender and cisgender was initially developed by transgender community leaders and research allies for inclusion on the 2001 Boston BRFSS survey. The 2013 version of the MA-BRFSS item is shown below.

Some people describe themselves as transgender when they experience a different gender identity from their sex at birth. For example, a person born into a male body, but who feels female or lives as a woman. Do you consider yourself to be transgender?

- Yes, transgender, male to female
- Yes, transgender, female to male
- Yes, transgender, gender non-conforming
- No

Note—Additional information for telephone interviewer if asked about definition of transgender: Some people describe themselves as transgender when they experience a different gender identity from their sex at birth. For example, a person born into a male body, but who feels female or lives as a woman would be transgender. Some transgender people change their physical appearance so that it matches their internal gender identity. Some transgender people take hormones and some have surgery. A transgender person may be of any sexual orientation – straight, gay, lesbian, or bisexual.

Note—Additional information for interviewer if asked about definition of gender non-conforming: Some people think of themselves as gender non-conforming when they do not identify only as a man or only as a woman.

Analyses of MA-BRFSS data collected between 2007-2009 indicate that 0.5% of 18-64 year old adults answered yes to this question and were classified as transgender (Conron et al., 2012). This population prevalence of transgender adults is consistent with population-based estimates from two other states (California and Vermont) (Conron et al., 2012). The non-response rate (1.4%) for this item was very low; in fact, it was lower than the non-response rate for sexual orientation, and much lower than the non-response rate for income on the same survey.

Reisner and colleagues recently cognitively tested this measure in a predominately white, college-educated, young adult sample (n=39) and found that the item was easily understood and answered by cis-gender and most transgender participants. However, two of nine transgender participants in the study sample did not endorse a “yes” (transgender) response option; therefore, it is possible that this item may under identify some transgender respondents. Evaluation of sensitivity and specificity in diverse, representative samples is warranted.

A slightly modified version of this item (shown below), as well as a separate sexual orientation identity item, was adopted by the Centers for Disease Control and Prevention in 2013 as an optional “sexual orientation and gender identity” module that states can include on their Behavioral Risk Factor Surveillance Surveys:

Do you consider yourself to be transgender?

If yes, ask “Do you consider yourself to be male-to-female, female-to-male, or gender non-conforming?”

1. Yes, transgender, male to female
2. Yes, transgender, female to male
3. Yes, transgender, gender non-conforming
4. No
7. Don't know/not sure
9. Refused

INTERVIEWER NOTE: If asked about definition of transgender:

Some people describe themselves as transgender when they experience a different gender identity from their sex at birth. For example, a person born into a male body, but who feels female or lives as a woman would be transgender. Some transgender people change their physical appearance so that it matches their internal gender identity. Some transgender people take hormones and some have surgery. A transgender person may be of any sexual orientation – straight, gay, lesbian, or bisexual.

INTERVIEWER NOTE: If asked about definition of gender non-conforming:

Some people think of themselves as gender non-conforming when they do not identify only as a man or only as a woman.

What is assessed: Transgender and sexual orientation identity

Required measure: LGBT identity

In 2008, the National Network for LGBT Tobacco Control (now the Network for LGBT Health Equity) developed and tested a single-item LGBT identity measure for Blue Cross Blue Shield of Minnesota. This

question queries about transgender, transsexual, or gender non-conforming identity and sexual orientation -- a format that allows both aspects of identity to be independently reported through a “check all that apply” mechanism.

Do you think of yourself as (please check all that apply):

- Straight
- Gay or lesbian
- Bisexual
- Transgender, transsexual, or gender non-conforming
- Not listed above (please write in): _____

Note—Optional desirable enhancement:

IF yes to transgender, then add this probe:

- Transgender or transsexual, male to female
- Transgender or transsexual, female to male
- Gender non-conforming

In 2008, this measure was cognitively tested in a diverse sample (including oversamples of people of color, LGB, and transgender people) in Minnesota and has been part of the state's surveillance system since then. Importantly, this item successfully prevented false positives by steering cisgender respondents, including those who did not understand what *transgender* meant, away from the transgender response option. Testing revealed that when the more familiar terms *gay* and *lesbian* precede the transgender identity option, they deterred cisgender respondents from inaccurately selecting transgender as a response option. The primary weakness of the original measure was that it failed to identify all transgender respondents. The follow-up probe is recommended by the Network for LGBT Health Equity and should be tested in future research since health issues vary by assigned sex at birth.

What is assessed: Gender conformity/non-conformity
Required measures: Assigned sex at birth and socially assigned gender expression items (2) or current gender identity and socially assigned gender expression

A two-item survey measure was developed to assess gender conformity/non-conformity among adolescents and adults in conjunction with information about the respondents' assigned sex at birth. The measure refers to socially assigned gender expression because respondents are asked to report on their perceptions of how their gender presentation is perceived by others. The measure is composed of two items that were adapted from a single item for assessing gender appearance conformity developed by Clark et al. in the Cancer Screening Project for Women in 2005 (Clark et al., 2005). In 2010, Wylie and colleagues evaluated the two-item measure in a cognitive interviewing study with a New England sample (n=82) of 18 to 30 year olds of all sexual orientations, both cisgender (n=64) and transgender (n=18) (Wylie et al., 2010). The final recommended versions of each item, the first assesses gendered appearance, and the second assesses gendered mannerisms, are presented here:

1. A person's appearance, style, or dress may affect the way people think of them. On average, how do you think people would describe your appearance, style, or dress? (Mark one answer)
 - Very feminine
 - Mostly feminine
 - Somewhat feminine
 - Equally feminine and masculine
 - Somewhat masculine
 - Mostly masculine
 - Very masculine

2. A person's mannerisms (such as the way they walk or talk) may affect the way people think of them. On average, how do you think people would describe your mannerisms? (Mark one answer)

- Very feminine
- Mostly feminine
- Somewhat feminine
- Equally feminine and masculine
- Somewhat masculine
- Mostly masculine
- Very masculine

Wylie et al. found item clarity, comprehension, and saliency to be high for these questions; however, some respondents, prior to the inclusion of the phrase "on average" in each item, reported difficulty formulating a response that characterized variability in their gender expression over time and context (e.g., school, work, home) and could be perceived differently by different groups of people. In order to facilitate the question-response process, the authors recommended adding the phrase "on average" to assist respondents in consolidating information about their perceived (socially assigned) gender expression across time, place, and referent groups. It is important to note that accurate characterizations of respondents as gender non-conforming also depend upon the availability of accurate data about assigned sex at birth.

Note: It is also possible to use a measure of current gender identity in conjunction with the socially assigned gender expression items which would provide information about gender non-conformity/conformity related to current gender identity. While the information gleaned from this approach would be consistent with that obtained using an assigned sex at birth item among cisgender respondents, the information gleaned would be different for transgender respondents. For instance, if a respondent who was assigned male sex at birth is perceived as very feminine across either or both socially assigned gender expression items, then the respondent would be classified as highly gender non-conforming. If the same respondent identifies as female or as a woman (current gender identity), then she would be classified as highly gender conforming using her responses to current gender identity and the socially assigned gender expression items. Either approach is reasonable; however, the classification of trans-

gender respondents as gender conforming/non-conforming will vary depending on whether the socially assigned gender expression items are paired with an item that assesses assigned sex at birth or one that assesses current gender identity.

Lombardi and colleagues tested these items in a Midwestern sample of adults (n=50) and found that some, both cisgender and transgender, had difficulty formulating responses to these questions due to variability in their gender expression over time and context and concerns about variability in perceptions of masculinity/femininity held by different potential referents (coworkers, family members, friends) (Lombardi et al., n.d.). In addition, some transgender participants recalled difficult experiences related to how others have perceived their gender expression, despite efforts to present themselves in a particular manner. Findings suggest that the item may be sensitive for some transgender survey respondents.

CONCLUSIONS

Although further research is needed, particularly with more diverse, representative samples, there is sufficient evidence to include measures that classify transgender and other gender minority respondents and cisgender respondents in population-based surveys now. Selecting an appropriate measure for use in a specific survey setting ultimately requires researchers to consider the purpose of data collection, outcome(s) of interest, the existing survey target, and the respondent population to which one wishes to generalize and assess. Gender expression, including socially assigned gender non-conformity, is an important, emerging health determinant, especially for children; however, further work is needed to refine measures of gender expression, particularly

as gender expression may vary over time, context, and across referents (Roberts et al., 2012; Roberts et al., 2013; Conron et al., 2014). Please refer to Chapter 4 for a discussion of gender non-conformity in relation to adolescent health surveillance.

RECOMMENDATIONS

1. Transgender/cisgender status via the “two-step” approach

When two demographic items can be added to an adult survey (or, in most instances, a standing measure of sex replaced and a measure of current gender identity added), we recommend including measures of self-reported assigned sex at birth and current gender identity. Testing shows that the “two step” approach appears the most likely to have high sensitivity, as well as high specificity, with adults. It is unclear whether assigned sex at birth should precede or follow current gender identity on population-based surveys; future studies should investigate ordering effects.

RECOMMENDED MEASURES FOR THE “TWO-STEP” APPROACH:

Assigned sex at birth

What sex were you assigned at birth, on your original birth certificate?

- Male
- Female

Current gender identity

How do you describe yourself? (check one)

- Male
- Female
- Transgender
- Do not identify as female, male, or transgender

PROMISING MEASURE FOR THE “CURRENT GENDER IDENTITY” STEP IN THE “TWO STEP” APPROACH (RECOMMENDED FOR FURTHER TESTING):

Current gender identity

What is your current gender identity? (Check all that apply)

- Male
- Female
- Trans male/Trans man
- Trans female/Trans woman
- Genderqueer/Gender non-conforming
- Different identity (please state): _____

2. Transgender/cisgender status via the MA BRFSS 2013 single-item approach

When valid, self-report measures of assigned sex at birth and current gender identity are not on a survey and cannot be added (or replace existing measures), then the following stand-alone demographic item is recommended:

RECOMMENDED MEASURE FOR SINGLE-ITEM TRANSGENDER/CISGENDER STATUS APPROACH:

Some people describe themselves as transgender when they experience a different gender identity from their sex at birth. For example, a person born into a male body, but who feels female or lives as a woman. Do you consider yourself to be transgender?

- Yes, transgender, male to female
- Yes, transgender, female to male
- Yes, transgender, gender non-conforming
- No

Note—Additional information for telephone interviewer if asked about definition of transgender: Some people describe themselves as transgender when they experience a different gender identity from their sex at birth. For example, a person born into a male body, but who feels female or lives as a woman would be transgender. Some transgender people change their physical appearance so that it matches their internal gender identity. Some transgender people take hormones and some have surgery. A transgender person may be of any sexual orientation – straight, gay, lesbian, or bisexual.

Note—Additional information for interviewer if asked about definition of gender non-conforming: Some people think of themselves as gender non-conforming when they do not identify only as a man or only as a woman.

3. LGBT Identity

When valid, self-report measures of assigned sex at birth and current gender identity are not on a survey and cannot be added (or replace existing measures) and a valid and separate measure of sexual orientation identity is not already on a survey and cannot be added, then the following stand-alone demographic item is recommended (without a write-in response option):

RECOMMENDED MEASURE FOR LGBT IDENTITY:

Do you think of yourself as (please check all that apply):

- Straight
- Gay or lesbian
- Bisexual
- Transgender, transsexual, or gender non-conforming

If yes to transgender, then probe:

- Transgender or transsexual, male to female
- Transgender or transsexual, female to male
- Gender non-conforming

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CHAPTER 3

IDENTIFYING TRANSGENDER AND OTHER GENDER MINORITY RESPONDENTS ON POPULATION-BASED SURVEYS: HOW AND WHERE TO ASK

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Deciding what questions to ask is a key task when constructing a survey instrument to identify transgender and other gender minority respondents. After selecting survey items appropriate for the research question and study purpose, it is next necessary to consider *how* to conduct the survey, including mode of data collection, placement of questions, and skip patterns.

Two-step Approach and Question Ordering

We recommend using the two-step approach to assess transgender status: asking assigned sex at birth and current gender identity.

Best practice:

We recommend asking assigned sex at birth and current gender identity questions to implement the two-step approach on population-based surveys.

No research to date has examined ordering effects related to the two-step approach (Sausa et al., 2009; Tate et al., 2012) where assigned sex at birth and current gender identity are asked in two separate questions and respondents are cross-classified. A substudy using a national cohort cognitively tested assigned sex at birth and current gender identity questions (in that order) (Reisner et al., in preparation). Research is needed to empirically test whether the order in which questions are asked influences response accuracy.

Mode of Data Collection

Mode of data collection refers to the method through which data are collected from respondents. Survey mode is related to sampling method (see Chapter 5 for discussion of sampling), but is a distinct aspect of survey design that warrants careful consideration. Surveys typically choose from various data collection modes that range from an interviewer asking questions in a face-to-face interaction with a respondent to a completely self-administered questionnaire. New and old technologies give researchers a wide variety of survey mode options, including paper and pencil or web-based self-administered questionnaires (SAQ), paper and pencil personal interviews (PAPI), computer-assisted personal interviews (CAPI), audio self-administered questionnaires from recorders (audio-SAQ), computer-assisted self-administered interviews (CASI), audio computer-assisted self-administered interviews (ACASI), telephone audio computer-assisted self-interviewing (T-ACASI), and interactive voice response (IVR) (e.g., Tourangeau & Smith, 1996; Tourangeau & Yan, 2007). There are also adaptations of these modes for specific subgroups, for example color-coded audio-computer assisted self-interviews (C-CASI) which has been shown to be culturally-sensitive, acceptable, and feasible to capture sensitive data from people with limited computer experience, non-English-speaking rural men and women in South India (Bhatnagar et al., 2013).

To our knowledge, no observational or experimental research has yet examined sex and gender-related survey

⁴ Author Note: This chapter draws heavily on Chapter 3 of the SMART report (SMART, 2009), which was co-authored by L. Badgett, C. Carpenter, and S. Landers, including some verbatim passages. Lead author Reisner adapted that earlier chapter to address issues of gender identity and expression measurement and was part of the process generating the recommendations listed here.

questions in relation to survey mode. However, in general, questions related to sex and gender are considered “sensitive” questions, both by participants and by survey administrators. Sex and gender-related questions like those recommended in this report ask about aspects of identity and self-expression that respondents might feel uncomfortable revealing because of fear of social stigma or discrimination, or because disclosing a gender minority status creates personal discomfort. Questions can be considered sensitive if respondents perceive them as intrusive, if questions raise fears about the potential repercussions of disclosing the information, or if they trigger social desirability concerns (Tourangeau & Yan, 2007). Social desirability bias refers to the tendency of respondents to answer questions in a way that will be seen favorably by others—this may include under-reporting of stigmatized identities or health behaviors and over-reporting of unstigmatized identities or health behaviors, depending on the questions being asked (Nederhof, 1985).

Survey administrators need to be aware that gender minority individuals are socially stigmatized, and disclosure of a transgender or another gender minority identity can have meaningful negative consequences for individuals with respect to workplace, family, and social outcomes. Respondents may be reluctant to report sensitive information in surveys, including disclosing their transgender status, partly because they are worried that the information may be accessible to third parties. Respondent privacy should be the guiding principle in thinking about survey questions designed to identify transgender and other gender minority respondents. Specific information about how survey data will or will not be protected is important to include in survey instructions for respondents. It is also important to contextualize the concern for privacy alongside the need for techniques to ensure accurate measurement. For example, some individuals may need some guidance and direction to accurately answer gender-related questions if they are unsure or unfamiliar with the concepts and terms used—for example, an interviewer-adminis-

tered prompt that defines the term *transgender* in the Massachusetts BRFSS. There may be tradeoffs between privacy and the need for respondent guidance in some cases.

Sensitive questions impact three important survey-related factors: (a) overall, or unit, response rates (the proportion of respondents who agree to take the survey), (b) item non-response rates (the proportion of respondents who agree to participate in the survey but who decline response to a particular item), (c) and response accuracy (the proportion of respondents who answer the questions correctly) (Tourangeau & Yan, 2007). The researcher’s concern is often that respondents either will not answer the question (non-response bias) or will answer with an inaccurate response (measurement error e.g., misclassification bias, false positives). The choice of an appropriate mode of data collection will help to mitigate these problems. In particular, enhancing the privacy of the survey environment appears to encourage respondents to answer sensitive questions, such as those related to gender identity, and to report accurately.

Best practice:

When possible, we recommend placing sex and gender-related questions on self-administered portions of a survey. This method could involve inclusion of a subset of questions on a paper-and-pencil self-administered questionnaire or inclusion on a self-administered computer-assisted interview.

Studies suggest that self-administered questionnaires enhance respondents’ sense of privacy and their willingness to report sensitive information. For example, Tourangeau, Rips, and Rasinski (2000) found that among nine survey modes measuring self-reported illicit drug use, 100% showed higher rates of reporting with self-administration than with interviewer administration.

To our knowledge, no studies have yet examined reported sex and gender-related measures in relation to survey mode. However, studies show self-administered questionnaires increase reporting of same-sex sexual behaviors (e.g., Tourangeau & Smith, 1996; Turner et al., 1998; Tourangeau & Yan, 2007; Villarroel et al., 2006). Numerous methodological studies have established that self-administration lessens social desirability effects, increasing accurate self-reporting of potentially sensitive health behaviors and stigmatized identities (Tourangeau & Yan, 2007).

Utilizing some survey modes over others might involve trade-offs that researchers need to consider (e.g., Gribble et al., 1999). For instance, one drawback of T-ACASI is that there is a higher degree of survey break-off than with a human interviewer. Paper and pencil SAQs do not allow for complex skip patterns or for consistency checks which can lead to poorer data quality (e.g., Reichmann et al., 2010; Reisner et al., 2014). Indeed, an analysis comparing missing data from an in-person paper-pencil SAQ versus an online SAQ of transgender adults found poorer data quality (increased item-level missingness) on the in-person paper-pencil SAQ (Reisner et al., 2014); however, the SES of respondents who completed the PAP SAQ was considerably lower than that of respondents who completed the on-line SAQ (see Mixed Survey Modes below). In addition SAQs require a degree of literacy and reading comprehension that might be problematic for some respondents, particularly respondents of lower socioeconomic status who may have less educational attainment. Paper and pencil SAQs may also result in higher levels of item non-response on sex and gender-related questions should respondents choose to skip those survey items. Modes that enhance privacy by reducing interviewer guidance might diminish accuracy, even though response rates are higher. Finally, shifting from a CAPI mode to a CASI mode for sex and gender-related questions may run the risk of drawing attention to those questions in a way that makes respondents more uncomfortable than they might otherwise be. However, differences in use of CAPI mode or CASI mode have not yet been investigated with respect to sex and gender-related questions.

The costs of ACASI or other advanced data collection methods that involve newer technologies may be prohibitive. If a survey is conducted by telephone only, there may still be ways to increase response rates and data quality regarding sex and gender-related measures. One recommendation is that individuals be able to report a transgender or other gender minority identity in a telephone survey without having to say aloud their identity (e.g., by instead stating the response option “A”, “B”, “C”, etc., or by pressing numbers on the telephone for various response options). We also recommend that, where possible, the interviewer record information on the setting and circumstances of the interview (e.g., whether another person was present in the room when the respondent answered, who that person was, etc.). Similar approaches can be used for in-person interviews; response cards (Dillman, 2008) are routinely used for sensitive questions, and this same method of selecting a response option by letter rather than having to say aloud the sex or gender identity response options can also be used. As with telephone surveys, it should be made clear to the respondent that only the correct response option needs to be indicated (e.g., “A”, “B”, etc.). These additional steps should help increase data quality in light of the historical stigma associated with reporting a gender minority status.

Survey modes are increasingly likely to be mixed when conducting surveys in order to overcome issues of coverage, non-response, and cost concerns (de Leeuw et al., 2008; de Leeuw, 2005). Mixed modes may also be used in different stages of a study (i.e., in initial screening or contact, main data collection, or follow-up). The use of mixed survey modes brings up the two differing philosophical approaches to survey design. Mode-specific design refers to optimizing the particular survey mode being used (Dillman, 2008). The idea is to use all the capability a mode has to offer to produce the best possible measurement. Examples are showing response cards in face-to-face interviews even though they cannot be used in a follow-up telephone survey, or using slider scales for web surveys even though that format can't be used in the same way for scalar items in other survey modes. Unified mode design,

or unimode mode design (Dillman, 2007) refers to finding ways to construct questionnaires that provide the same stimulus in all survey modes. An example is the use of forced-choice versus check-all-that-apply question formats. Forced-choice format is more likely to produce equivalent answers across survey modes than check-all-that-apply (Smyth et al., 2006). This may require holding back on some of the features of individual models to try to get common survey measurement across modes.

Surveys that are administered by interviewers sometimes rely on the interviewer's judgment to assess the sex of respondents, for instance by categorizing respondents' sex on the basis of their voices. This practice would be a source of significant measurement error for transgender and other gender minority respondents. It also can lead to error in other situations, such as with people who smoke or have unusually high or low speaking voices. We recommend that sex and gender-related questions always be explicitly asked and answered by respondents. In our experience, respondents are familiar enough with the process of reading a script to alleviate any discomfort that might occur if the answer to the question appears to the respondent to be obvious. In these cases, the interviewer can just reiterate that they must follow the survey script absolutely.

Ultimately, decisions about survey mode are driven by a broad range of concerns, including available technologies, the study budget, feasibility and acceptability of different modes with the target population, and study goals. Practical restrictions like available time and budget require consideration alongside scientific and empirical concerns, such as response rate and accuracy. Giving people a choice of survey mode has not been implemented with transgender or other gender minority respondents and represents an idea for future research.

Mixed Survey Modes in Community-based Research

Mixed survey modes have been used in community-based research with transgender and other

gender minority adult respondents (Bradford et al., 2013; Grant et al., 2011). In 2008, the National Center for Transgender Equality (NCTE) and the National Gay and Lesbian Task Force (NGLTF) partnered to conduct the U.S. National Transgender Discrimination Survey (NTDS), the largest purposive sample study of transgender and other gender minority adults (ages 18-89 years) conducted to date (Grant et al., 2011). Two data collection methods were used to recruit the sample and ensure heterogeneity and diversity of the respondent population. First, paper-pencil surveys were selectively distributed to community-based healthcare and social service organizations that agreed to do in-person, face-to-face outreach to transgender and other gender minority people who were unlikely to get electronic information about the survey or to be able to complete the survey online. Second, an online survey link was distributed via electronic and digital social networks such as online listservs and email lists. While the NTDS is not a population-based survey, analysis of differences in patterns of responses between paper-pencil and online surveys can be useful in helping to understand the potential effects of survey mode on population-based surveys that include questions designed to identify transgender and other gender minority respondents.

The final NTDS study sample included 6,456 respondents from all 50 states. An analysis of these data by Reisner et al. (2014) compared respondents who completed the one-time survey either in-person using paper-pencil SAQ (n=435) or online using SAQ (n=6,021).

Data Quality and Completeness

Data quality and completeness of online data collection was superior to in-person SAQ (See Table 1). Overall, 60.2% of in-person respondents skipped one or more survey items, compared to only 16.9% of online respondents ($p < 0.0001$).

TABLE 1. National Transgender Discrimination Survey (n=6,456): Comparing Item-Level Missingness (Yes/No) By Data Collection Method (In-Person versus Online).+

	In-Person (n=435)		Online (n=6021)		In-Person Versus Online Comparisons	
	n	%	n	%	χ^2	p-value
ITEM SPECIFIC MISSINGNESS						
Sociodemographics						
Age	80	18.4	491	8.2	52.72	<0.0001
Assigned Sex at Birth	6	1.4	14	0.2	17.28	<0.0001
Gender Identity	12	2.8	10	0.2	80.29	<0.0001
Race/Ethnicity	7	1.6	40	0.7	5.01	0.025
Educational Attainment	31	7.1	8	0.1	330.46	<0.0001
Income	66	15.2	132	2.2	229.92	<0.0001
Health Insurance	97	22.3	94	1.6	607.71	<0.0001
Gender Nonconformity	36	8.3	5	0.1	431.53	<0.0001
Health-Related Indicators						
Hormones for Gender Affirmation	87	20.0	96	1.6	499.0	<0.0001
Surgery for Gender Affirmation	97	22.3	51	0.9	833.5	<0.0001
Smoked 100+ Cigarettes Ever	45	10.3	15	0.3	449.1	<0.0001
Current Daily Smoker	44	10.1	13	0.2	454.3	<0.0001
HIV Serostatus	52	12.2	32	0.5	424.0	<0.0001
Substance Use to Cope with Mistreatment	45	10.3	29	0.5	348.3	<0.0001
Suicide Attempt Ever	44	10.1	36	0.6	300.3	<0.0001
Postponed Care When Sick/Injured Due to Discrimination	86	19.8	75	1.3	572.5	<0.0001
Postponed Preventive Care Due to Discrimination	82	18.9	75	1.3	529.9	<0.0001
Refused Treatment/Care By A Doctor/Provider	85	19.5	73	1.2	570.8	<0.0001
Any Missing Item Yes	262	60.2	1016	16.9	480.3	<0.0001
Number of Items Missing						
0 Items	173	39.8	5005	83.1	1116.2	<0.0001
1 Item	111	25.5	842	14.0		
2 Items	36	8.3	104	1.7		
3 or More Items	126	26.4	70	1.2		

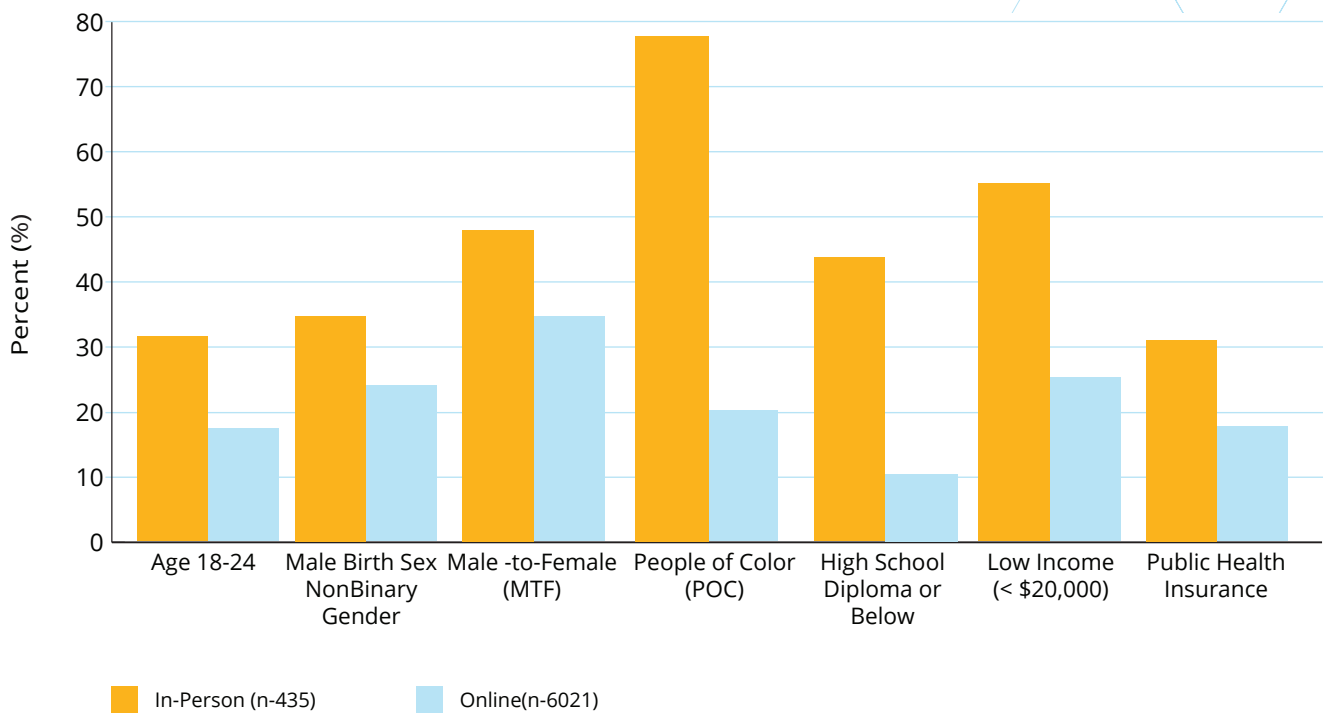
+A binary indicator variable was created for each variable to assess missingness (missing vs not missing). Shown are missing cases for each variable (non-missing cases are not tabled). Bivariate χ^2 tests with 1 degree of freedom (2 x 2 tables) were used to test for differences in item-level missingness by data collection method (in-person vs online). A 3 degree of freedom test was used for number of items missing (0, 1, 2, 3 or more) by data collection method.

Sociodemographic Characteristics

The sociodemographic characteristics of the sample significantly differed by survey mode (Figure 1). In-person respondents were younger and more likely to be on the trans feminine spectrum (e.g., male assigned sex at birth identify as non-binary or female gender). A higher proportion of in-person respon-

dents compared to online respondents were people of color (77.6% vs 20.1%), had a low income earning <\$19,999 annually (54.9% vs 25.1%), had lower educational attainment with high school diploma or less (43.6% vs 10.3%), and did not have health insurance (32.9% vs 18.1%) (all $p < 0.05$).

FIGURE 1. Sociodemographic comparisons by data collection method.+



+Multivariable model adjusted for geographic region and visual gender nonconformity. All $p < 0.05$. Multi-parameter Wald tests (global omnibus tests) of overall effect of each variable (e.g., race/ethnicity).

Health

The health of respondents differed by data collection method (Table 2). In-person respondents were more likely to have had surgical gender affirmation, to have smoked 100+ cigarettes in their lifetime, to be a current daily cigarette smoker, report substance use to cope with mistreatment, and to self-report a HIV-positive serostatus.

TABLE 2. Health-Related Indicators By Data Collection Method (n=6456): Comparing Paper (n=435) and Online (n=6021) Respondents.+

Health-Related Indicators	In-Person (n=435)	Online (n=6021)	Total (n=6456)	Age-Adjusted Models	
	%	%	%	Adj RRs (95% CI)	p-value
Hormones for Gender Affirmation	56.9	57.4	57.3	1.22 (0.97, 1.53)	0.093
Surgical Gender Affirmation	35.5	32.4	32.6	1.31 (1.04, 1.65)	0.020
Smoked 100+ Cigarettes in Lifetime	55.4	50.9	51.2	1.31 (1.06, 1.62)	0.013
Current Daily Smoker	31.5	18.1	19.0	2.05 (1.64, 2.56)	<0.0001
Substance Use to Cope with Mistreatment	42.7	24.4	25.6	2.18 (1.76, 2.69)	<0.0001
Suicide Attempt Ever	43.3	40.4	40.6	1.05 (0.85, 1.31)	0.637
HIV-Positive Serostatus	19.8	1.4	2.6	15.66 (11.26, 21.77)	<0.0001
Postponed Care When Sick/Injured Due to Discrimination	26.1	23.6	23.7	1.03 (0.79, 1.33)	0.850
Postponed Preventive Care Due to Discrimination	26.7	27.3	27.3	0.86 (0.68, 1.09)	0.210
Refused Treatment/Care By A Doctor/Provider	17.0	15.3	15.5	1.17 (0.87, 1.57)	0.286

RR= Risk Ratio. 95% CI=95% Confidence Interval. + Age-adjusted models are presented, given differential distribution of age in the in-person and online samples.

In-person and online NTDS respondents differed on key sociodemographic and health characteristics. There were especially stark differences in the racial/ethnic and socioeconomic composition of respondents by data collection method. People of color comprised more than two-thirds of respondents recruited via in-person outreach efforts through community-based linkages and face-to-face contacts, compared to less than one quarter of online respondents. Similarly, there were large differences in educational attainment, income, and health insurance, with in-person respondents disproportionately of lower socioeconomic status than online respondents. The two data collection methods yielded two distinct samples that represent very different subsets of the transgender respondent population. Missing data also differed by data collection methods, with a significantly higher proportion of missing

data found in the in-person versus online sample; however, some of this difference is due to differences in SES, and presumably in literacy, between the two samples.

Each data collection method has unique advantages and disadvantages that must be considered prior to selecting the recruitment strategies and formats to implement a population-based survey. The choice of data collection method also needs to be carefully considered alongside the health outcome being researched. Findings suggest that a more demographically diverse sample of transgender and other gender minority adults—potentially more representative of the gender minority respondent population in its entirety—will be obtained by using multiple data collection methods. Mixed survey modes may be a useful tool in the design of population-based

surveys that include identification of transgender and other gender minority respondents. Thoughtful consideration of survey mode may reduce sample bias (e.g., Bauer & Scheim, 2013) and help to identify a gender minority respondent sample that is more reflective of the true population of gender minority individuals.

Optimal Placement of Questions

In addition to deciding the mode of data collection for sex and gender-related questions on large population-based surveys, a closely related issue concerns the optimal placement of questions. Should sex and gender-related survey items come toward the beginning, middle, or end of the survey? What types of questions should lead into and out from these questions? Survey design texts often recommend that questionnaire designers keep “sensitive” questions to the end of a survey so as to minimize the risk of one specific form of non-response—break-offs, or respondents quitting the survey part way through the questionnaire (Sudman & Bradburn, 1982). However, we recommend having the sex and gender-related questions as part of a standard demographic section (the “demographics” approach). This placement conveys the idea that this is just another characteristic of the individual, like race, ethnicity, sexual orientation, or citizenship.

Careful consideration must be given to survey mode alongside question placement. For example, many paper-and-pencil surveys of young people place their demographic questions at the beginning of the survey (e.g., school-based classroom surveys of adolescents; YRBS), which will mean that most students are still on the same page when the sex and gender-related questions are viewed, and this may make it more difficult to ensure privacy or anonymity of respondents. In these instances, the demographics should span two pages, and the sex and gender-related questions should be placed on page two to help ensure privacy or anonymity.

We have no recommendation regarding the optimal order or placement in which to ask multiple aspects of gender (e.g., gender identity, gender expression).

Best practice:

We recommend including sex and gender-related survey questions at the end of the standard “Demographics” section. For paper-and-pencil surveys, we recommend these questions be placed early in a survey, but not on the cover page to help ensure privacy or anonymity of respondents.

Skip patterns

One way to reduce the response burden for respondents when collecting data to identify transgender people and other gender minorities is to use skip patterns to essentially hide more detailed questions about gender minority status from respondents who do not self-report as transgender or another gender minority in an initial measure. With the widespread use of computer-assisted surveys, this becomes relatively easy to build into the instruments. For many of the measures presented in this report, more detailed questions about gender identity can be asked of only the subset that indicates they are transgender in an initial question. This strategy is particularly recommended to obtain information about transgender men versus transgender women (i.e., by comparing assigned sex at birth versus current gender identity) since there are substantive differences in health risks and disparities between transgender men and transgender women. In this case, the relatively small size of a gender minority sample allows for flexibility that will help further refine questions. For example, if an open-ended measure (i.e., write-in option) is added after the respondent indicates they are transgender, the number of write-in responses would be small enough to easily scan and use for information to further refine measures in the future. Indeed, scanning these open-ended self-reported identity labels for LGB/T measures in the field now is one of the primary ways researchers identify flaws in or build enhancements for existing measures.

Skip patterns that split survey respondents by sex

Surveys which split respondents into different pathways based upon their responses to a question about their sex cause complications for transgender respondents. While in some instances asking questions based on gender identity may be more appropriate, many health surveys ask risk and history questions that are related to anatomy (e.g., mammography, cervical and prostate cancer screening). In these instances, skip patterns based upon assigned sex at birth would be more appropriate. We recommend carefully considering the types of questions asked for each gender in the case of a survey that splits respondents in this way. If the responses are best answered according to one's sex assigned at birth, then make sure the protocol which directs each respondent into the male or female sub-surveys is based upon a sex assigned at birth question.

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CONCLUSION

Deciding what sex and gender-related questions to ask is a key task when constructing a survey instrument to identify transgender and other gender minority respondents. Survey items should be selected that are appropriate for the research question and study purpose. Once this is done, it is necessary to carefully consider *how* to conduct the survey, including mode of data collection, placement of questions, and skip patterns. Practical restrictions like available time and budget require consideration alongside scientific and empirical concerns, such as response rate and accuracy. Careful placement, survey mode adaptations, and skip patterns may improve the quality of data about transgender and other gender minority people.

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CHAPTER 4

IDENTIFYING TRANSGENDER AND OTHER GENDER MINORITY RESPONDENTS ON POPULATION-BASED SURVEYS: SPECIAL CONSIDERATIONS FOR ADOLESCENTS, RACE/ETHNICITY, SOCIOECONOMIC STATUS, AND INTERSEX STATUS

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Considerations for Identifying Transgender and Other Gender Minority Adolescents on Population-Based Surveys

High rates of school-based bullying and other victimization, suicidality, and HIV infection among transgender and gender non-conforming youth (Garofalo et al., 2006; Greytak et al., 2009; Grossman & D'Augelli, 2007; Grossman, D'Augelli, & Salter, 2006; Kosciw et al., 2012; Toomey et al., 2010) highlight the need to monitor the health and well-being of this vulnerable population in adolescent surveillance systems. In fact, some cities (Student, Family, and Community Support Department, San Francisco Unified School District, n.d.) and the state of Massachusetts (Massachusetts Department of Public Health, Massachusetts Department of Elementary and Secondary Education, n.d.) are attempting to generate school-based data about the needs of transgender and other gender minority youth. This section raises adolescent-specific considerations and summarizes the most promising adolescent measurement research, including work not found in the peer-review literature. The reader is directed to Chapter 2 for a discussion of issues that pertain to population-based survey research with both adults and youth and to the glossary for definitions of the terms *sex*, *gender*, *transgender*, and *gender non-conformity*. Three additional issues to consider when collecting data from adolescents are:

- 1) Transgender and other gender minority youth may not adopt alternative

gender identity labels until mid- to late-adolescence, but may exhibit behavior that is gender non-conforming in childhood (Grossman, D'Augelli, & Salter, 2006; Devor, 2010). Cisgender youth, particularly cisgender lesbian, gay, and bisexual youth, may also exhibit gender non-conforming behavior that places them at elevated risk of violence and harassment (Roberts et al., 2012; Roberts et al., 2013). When sample sizes are small and/or the goal is to identify a minority group that is at risk of negative social attention (i.e., gender non-conforming youth), then a measure of gender expression, when accompanied by a valid measure of assigned sex at birth (or current gender identity – please refer to note on page 15 of Chapter 2), may be appropriate.

- 2) Adolescents may have particular difficulties with complex vocabulary and sentences. Therefore, questions designed for adolescents should take extra care to use plain language and simple sentences. Terms used in measures of sex and gender should be defined since adolescents, and cisgender (non-transgender) adolescents in particular, conflate the terms *sex* and *gender*, and have varying understanding of the term *transgender*, *masculine*, and *feminine* (Conron, 2011; Conron, Scout, & Austin, 2008; Wilson et al., 2014).

- 3) Adolescents often lack privacy when completing surveys in schools. For this reason, we recommend that measures that make transgender or other gender minority youth identifiable not be placed at the beginning of surveys when peers are likely to be responding to the same survey items at the same time.

Measurement Approaches and Measures (Survey Items)

What is assessed: Gender conformity/non-conformity

Required measures: Assigned sex at birth and socially assigned gender expression item

GLSEN tested a one-item version of a two-item measure of gender expression adapted from Wylie and colleagues (Wylie et al., 2010) (see Chapter 2). Importantly, this adaptation specified a referent and setting, “other people at school,” (Conron et al., in press) and, thus, may address challenges noted in prior research regarding variability in the expression of gender across settings and in the perception of various referents. These items underwent cognitive testing

with 25 youth ages 14-18 who varied on gender (10 transgender, 15 cisgender), as well as on race/ethnicity, sexual orientation, and geography. Cognitive interviews indicated that adolescents understood the item and that they were able to select an appropriate response option. This item was pilot tested in a sample of adolescents (N=519) recruited by Harris Interactive, a national polling firm. Participants were drawn from the Harris Poll Online (HPOL) database who had previously agreed to participate in Harris Interactive surveys. For this specific survey, they were recruited in two ways: 1) Harris Interactive sent an email invitation containing the Internet link to the survey to potential adolescent participants (14-18 years of age); and 2) Harris Interactive sent an email invitation to adults with children 14-18 years of age that asked them to share the survey link with their child if they'd like them to participate. Findings indicated that this modified item performed as expected -- most (87.2%) respondents who selected female sex and female gender identity selected a gender expression response somewhere in the feminine continuum and vice versa (GLSEN, in press).

RECOMMENDED MEASURE ASSESSING SOCIALLY ASSIGNED GENDER CONFORMITY/NON-CONFORMITY AMONG ADOLESCENTS (GLSEN ADAPTION OF WYLIE ET AL.'S MEASURE):

A person's appearance, style, dress, or mannerisms (such as the way they walk or talk) may affect the way people think of them. On average, how do you think other people at school would describe your appearance, style, dress, or mannerisms?

- Very feminine
- Mostly feminine
- Somewhat feminine
- Equally feminine and masculine
- Somewhat masculine
- Mostly masculine
- Very masculine

Adaption of Wylie et al.'s measure and testing in a foster care sample:

As part of a study of foster care youth in greater Los Angeles, CA area, Wilson and colleagues also assessed an adapted version of the Wylie et al. measure (changing “on average” to “on a typical day”) among 20 youth (ages 12-18; 19 cisgender and 1 transgender youth.) They found that nearly a third were unfamiliar with the terms “masculine” and “feminine,” prompting researchers to recommend including definitions of these terms in the survey interview protocol (Wilson et al., 2014).

Conclusions Related to Socially Assigned Gender Expression

In 2013, the GLSEN-adapted version of the Wylie et al. measure was added, with slight revisions,⁵ to the Optional Questions bank for the CDC’s Youth Risk Behavior Survey Questionnaire. Four local education agencies chose to include this item on their YRBS questionnaire in 2013, but its performance has not yet been assessed. This measure is currently recommended for use on school-based surveys in conjunction with a valid measure of assigned sex at birth (Conron et al., in press). Future refinements to this measure may include adding definitions of the terms *masculine* and *feminine*.

What is assessed: Transgender/cisgender status Required measure: Transgender status

Conron and colleagues developed and evaluated a single-item measure of transgender status for use on adolescent health surveys (Conron et al., in press). This measure includes a plain language definition of the term *transgender* that was informed by previous qualitative research with adolescents (Conron, Scout, & Austin, 2008). Comprehension and respondent burden were assessed qualitatively during focus groups, while the validity of classifications derived from this measure were evaluated quantitatively in

a Massachusetts community-based sample (n=73) that was diverse by gender, race/ethnicity, sexual orientation, and family socioeconomic status. The item was found to be understandable and easy to answer by 13-18 year old cisgender and transgender youth. Multiple sources of information were available about the assigned sex at birth, current gender identity, gender expression, gender-related victimization, and transgender status of participants which enabled the evaluation of the measure’s discriminant validity. In other words, the “true” transgender/cisgender status of respondents was known to the researchers. The transgender status measure differentiated (discriminated) well between transgender and cisgender youth in the study sample. Responses were associated with related constructs (e.g., bullying, recalled childhood gender expression), indicating support for the construct validity of the measure (Conron et al., in press). The final recommended item was incorporated into the Massachusetts 2013 school-based Youth Health Survey (Massachusetts Department of Public Health, Massachusetts Department of Elementary and Secondary Education, n.d.) and is as follows:

Please choose the one best fitting response. When a person’s sex and gender do not match, they might think of themselves as transgender. Sex is what a person is born. Gender is how a person feels. Are you transgender?

- No
- Yes, and I identify as a boy or man
- Yes, and I identify as a girl or woman
- Yes, and I identify in some other way
- I do not know what this question is asking
- I do not know if I am transgender

GLSEN, on behalf of the All Students Count Coalition, a coalition of education, health, and advocacy organizations working towards LGBT-inclusion in the Center for Disease Control and Prevention’s Youth

⁵ The question stem of the GLSEN-adapted Wylie et al. gender expression measure was modified to read as: “A person’s appearance, style, dress, or the way they walk or talk may affect how people describe them. How do you think other people at school would describe you?” This modification was made by the CDC in an effort to simplify the question wording.

Risk Behavior Survey (<http://amplifyyourvoice.org/allstudentscount>), tested a version of Conron's measure with response options that were modified to fit with Youth Risk Behavior Survey formatting. Findings from individual cognitive testing interviews with 25 youth ages 14-18 who varied on gender (10 transgender, 15 cisgender), as well as race/ethnicity, sexual orientation, and geography indicated no discomfort, confusion, or difficulty selecting a response. The item was then pilot tested in the Harris Interactive sample of secondary students (N=519, ages 14-18), described earlier in this chapter, using an online survey. Most (99.2%) of the sample selected "no" as their response to the transgender status question and selected concordant male/male or female/female responses to questions about assigned sex at birth and gender identity and, thus, may be cisgender. Only nine respondents selected a transgender response option and over half (n=5) of these reported concordant responses to assigned sex at birth and gender identity items. Findings suggest that either this item misclassified a small percentage of cisgender youth as transgender and/or that responses to the assigned sex at birth and/or gender identity measures were inaccurate for half of transgender respondents (GLSEN, in press).

In an effort to reduce misclassification, the response options were further revised ("yes," "no," and "not sure" responses were offered) and evaluated. GLSEN conducted a second wave of cognitive testing with 12 youth ages 14-18 (6 transgender, 6 cisgender) and found that the item remained acceptable to adolescents. Most (99.6%) respondents in a second, large (N=1,017) Harris Interactive sample selected "no" as their response to the transgender status question and selected concordant male/male or female/female responses to questions about assigned sex at birth and gender identity and, thus, may be cisgender. Preliminary results suggest that a small number (n=24) of cisgender youth may have been misclassified as transgender or that a large proportion of transgender respondents (24 of 32) may have answered the assigned sex at birth or gender identity measures inaccurately (GLSEN, in press).

Additional analyses suggest that ordering or priming (prior exposure to terminology) impacts the question-response process. Pilot testing was conducted in two subsamples in order to assess potential item order effects. In the first subsample, assigned sex and gender identity items were presented first, followed by several unrelated items and then the transgender status measure (Order A). In the second subsample, the transgender item was presented first (Order B). Misclassification appears to have been reduced by presenting the transgender status item prior to the assigned sex at birth and gender identity items (1.2% of sample potentially misclassified in Order B compared to 4.9% in Order A sample). Further research is needed to understand these response patterns and to understand the performance of these measures when used in school-based settings (GLSEN, in press).

GLSEN 1st adaption of Conron's measure:

When a person's sex and gender do not match, they might think of themselves as transgender. Sex is what a person is born. Gender is how a person feels. Which one response best describes you?

- I am not transgender
- I am transgender and identify as a boy or man
- I am transgender and identify as a girl or woman
- I am transgender and identify in some other way

GLSEN 2nd adaption of Conron's measure:

Sex is what a person is born. Gender is how a person feels. When a person's sex and gender do not match, they might think of themselves as transgender. Are you transgender?

- No
- Yes
- Not sure

Conclusions Related to Transgender Status Measures

Pilot testing of the original transgender status measure developed by Conron, as well as GLSEN's first adapted version, is recommended in school-

based samples. Both of these versions allow for the reporting of nuanced identities. Importantly, multiple (valid) measures of relevant constructs must be collected in diverse pilot testing samples in order to evaluate measurement validity (Conron et al., in press).

What is assessed: Transgender/cisgender status via the “two-step approach”

Required measures: Assigned sex at birth and current gender identity

As described in Chapter 2, the “two-step” method relies on two questions to classify respondents as transgender (discordant responses) or cisgender (concordant responses). This approach has been tested in a heterogeneous Massachusetts adolescent sample using a common “sex” measure (“What is your sex? 1 = male, 2 = female). As reported in Conron et al. (in press) LGBT youths interpreted the sex item as inquiring about a range of physical traits and states, including current, biological, and legal sex. Seven of 32 transgender youths (21.9%) did not provide a valid response to the sex item which contributed to low sensitivity of the “two-step” approach. It remains unclear whether the “two-step” approach would be useful in adolescent health research settings. However, this approach merits further research and should build on GLSEN’s recent work on a measure of assigned sex at birth (as reported below).

Assigned Sex at Birth

In order to accurately classify all cisgender and transgender respondents as gender non-conforming on the basis of responses to a measure of gender expression, valid data about assigned sex at birth must be available (see Chapter 2 for further discussion) (Conron et al., in press). However, given that the vast majority of respondents are believed to be cisgender, even poor measures of sex will accurately classify the vast majority as gender conforming/non-conforming. Importantly, data about assigned sex at birth are also needed to classify respondents as transgender/cisgender using the “two-step” approach. Most surveys of the general population of adolescents do not assess self-reported sex assigned at birth; however, GLSEN cognitively tested the following measure with 25 diverse youth (cognitive

testing sample described previously) and found that cisgender and transgender adolescents found the item easy to understand and were able to select an appropriate response. Some transgender youth indicated that it caused them slight discomfort to recall their assigned sex, but expressed appreciation that the question was asking about “assigned” sex as opposed to less clear or sensitive ways of asking about sex (i.e., through the use of the term *biological sex*) (GLSEN, in press).

RECOMMENDED MEASURE ASSESSING ASSIGNED SEX AT BIRTH AMONG ADOLESCENTS:

What sex were you assigned at birth (what the doctor put on your birth certificate)?

- Male
- Female

Current Gender Identity

At this point in time, there is no recommended measure of current gender identity for use with adolescents, nor clear evidence that the “two-step approach” is appropriate for adolescent surveys. Further research is needed to investigate the potential of this approach for adolescents.

CONCLUSIONS

Gender expression, including socially assigned gender non-conformity, is an important, emerging health determinant, especially for children (Roberts et al., 2012; Roberts et al., 2013). Although further research is needed, there is sufficient evidence to include measures that assess gender expression and assigned sex at birth on population-based school surveys now. Further testing of transgender status measures in school based samples is warranted. Research is also warranted to develop and evaluate a measure of current gender identity and to assess the “two-step” approach with adolescents. Importantly, multiple (valid) measures of relevant constructs must be collected in order to evaluate measurement validity (Conron et al., in press).

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Considerations Regarding Race and Ethnicity when Identifying Transgender and Other Gender Minority Respondents on Population-Based Surveys

The Institute of Medicine (IOM) report on LGBT health advocated for the measurement and surveillance of gender identity as well as sexual orientation (IOM, 2011). While the addition of a sexual orientation survey item on the NHIS evidences some progress in this regard, development and testing of methods to improve survey items designed to identify transgender and other gender minority respondents on large federal surveys remains relatively rare.

Though some research has examined whether there are differences in response to measurement items on LGBT identity items associated with race or ethnicity (e.g., Williams Institute, 2008), there has been limited analysis of whether known community-level differences in nomenclature and terminology related to self-identity influences the accuracy and sensitivity of measures that can be used to identify transgender and other gender minority people of color. There is also anecdotal evidence that there may be differences in nomenclature for transgender identities based on race/ethnicity. For example, “stud” is a term that is commonly used by African American masculine-identified women. However, it is not known whether these same individuals would also identify as transgender. As such, further research is needed to determine whether and how differences in the language of self-identity among people of color impact our ability to accurately capture and reflect their experiences.

Theory Development and Testing

Minority stress, which refers to the social stress that results from belonging to a stigmatized social category (Williams, Neighbors et al., 2003; Meyer, 2003), has been highlighted as an important, but under-researched influence on risk behaviors (Krieger, Smith et al., 2005). To date, less is known about the relationship of minority stress variables on health outcomes among transgender and other gender minority persons. The importance of obtain-

ing accurate data on transgender and other gender minority people of color is critical given the known disparities in health and well-being in the general population based on race and ethnicity. The social and economic determinants of health disparities that negatively impact the health of people of color likely operate similarly on the health of transgender and other gender minority people of color, indicating the need for an approach that considers how different identity labels intersect in individuals, referred to as intersectionality (Bowleg, 2012; Bauer, 2014). Further, transgender people of color are disproportionately impacted by gender specific discrimination and violence. For example, a report by the National Coalition of Anti-Violence Programs showed that the number of transgender murders each previous year exceeded all the other tracked hate crimes put together (NCAVP, 2014). Many of these homicides are committed against transgender people of color, especially transgender women of color.

These statistics are staggering considering that several population-based data sources have shown that transgender people may represent less than 1% of the population (Conron et al., 2012; Gates, 2011) and, combined, racial and ethnic minorities comprise about one-third of the U.S. population (U.S. Census Bureau, 2012). Higher murder rates in the transgender population likely correspond to elevated prevalence of discrimination experiences across all levels. As with white transgender communities, we also hypothesize that there may be differences in experiences between MTF and FTM transgender people of color (with MTF experiencing the highest level of discrimination among all transgender or LGB communities) (Scout, 2005). While community-based surveys and qualitative studies help us to understand some of these differences in experiences, such exploration will only be advanced through large, on-going surveys where data may be aggregated over time and across place (Buchting & Fagan, 2008).

Data analysis

Separate subgroup analyses of outcomes. Evidence also suggests substantial differences in characteristics of gender minorities across a variety of demographic sub-groupings (Scout, 2005). Researchers should always be aware that characteristics attributed to the transgender community are largely associated primarily with white transgender individuals since they represent the largest racial/ethnic grouping within the population. An additional consideration when analyzing data on racial or ethnic minority transgender and other gender minority individuals concerns the need to understand factors that mediate the choice of identity categories, particularly discrimination and acculturation.

Future Research Needs

Lack of data collection about gender minority people of color in surveillance is part of a larger pattern of not capturing data about gender minorities across all areas of research. The resultant lack of information needs to be addressed from multiple angles. For instance, if transgender and other gender minority people of color are not routinely included in health research studies, the data obtained from surveillance will not spur much-needed knowledge building.

In the general population, advances in research are hampered by the under-representation of populations that have experienced a historical pattern of disparities (Drolet & Lorenzi, 2011). Evidence-based approaches to participant engagement in research endeavors are available but have not been widely adopted by researchers (Wallerstein & Duran, 2010). Among communities of color, the basic tenets of participant engagement – cultural competency, community collaboration, and patient centeredness – have been shown to help overcome identified barriers to research participation. A report by the Williams Institute (2008) on sampling methodologies for LGBT persons of color resulted in several key recommendations that should be considered in improving population-based data resources that identify transgender and other gender minority people of color. These

recommendations included the following promising strategies:

- Encourage NIH to use the Funding Opportunity Announcement/Request for Application (FOA/RFA) model as one route to getting appropriate expertise on study sections;
- Urge NIH to fund and test innovative sampling strategies for a variety of small, hidden, or hard-to-reach populations;
- Support testing enhancements of respondent-driven sampling to expand applicability to geographically dispersed populations;
- Encourage more transgender researchers and small population methodologists to join review panels; and
- Use mixed research methods to create the strongest possible projects for grants submission.

One additional strategy for obtaining more information about small populations, like transgender people of color, includes aggregating available data (e.g., BRFSS and YRBS) over time and across geographic areas, since such a strategy can yield larger samples than any single data collection effort.

Special consideration should be given to determining the best ways to construct quality sex and gender-related questions in Spanish that can allow for identification of transgender other gender minority respondents. Regional variations in Spanish language terminology may also require question construction designed for specific Spanish-speaking populations. For example, in Puerto Rico, the LGBT communities' refers to themselves as the LGBTTT communities, with the two Ts standing for Transgénero (which is more equivalent to the English term cross-dresser than genderqueer) and Transexual (which is the same meaning as the English word). After local education, the Puerto Rican Department of Health has altered their BRFSS survey to allow for identification of transgender respondents. Their exact measure is as follows (Serrano, 2013):

La siguiente pregunta está relacionada a su género. Es importante recordarle que todas sus contestaciones son completamente confidenciales. ¿Cuál de las siguientes alternativas describe mejor su género?

1. Hombre
2. Mujer
3. Transgénero
4. Transexual
5. Otro
7. No sabe/No está seguro
9. Se niega a contestar

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Puerto Rico's health department staff reported no known problems administering this question for the past two years. For the 2012 BRFSS, the total sample was 2.8M, and this question yielded 0.1% for transgender respondents, and another 0.1% for transsexual respondents. While these percentages are small and likely reflect a fear of disclosure, in Puerto Rico alone it represents 7,000 completed BRFSS surveys from transgender or transsexual respondents. This population-based sample of transgender adults is likely the largest available today.

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Considerations Regarding Socioeconomic Status when Identifying Transgender and Other Gender Minority Respondents on Population-Based Surveys

Social and economic marginalization is an unfortunate reality for many transgender and other gender minority people. In the Massachusetts BRFSS (MA BRFSS), the only comparative study of a household probability sample conducted to date, transgender adults (sample of 131 transgender adults ages 18-64 years) had a significantly higher prevalence of unemployment (32.9% vs 11.9%) and poverty (13.2% vs 9.3%) compared to cisgender adults (Conron et al., 2012). The socioeconomic disparities experienced by transgender and other gender minority people are attributable to social and structural exclusion—especially anti-transgender discrimination in education, employment, housing, and healthcare (Reisner et al., 2013).

Why are socioeconomic disparities an important consideration with methodological implications for the science of understanding the health, epidemiology, and demography of transgender and other gender minority populations?

The socioeconomic gradient in health

Socioeconomic status (SES) is a powerful determinant of health across many populations, geographic settings, and contexts; indeed, lower SES is a consistent predictor of poorer health globally (WHO, 2008). If a high proportion of the gender minority population is lower SES and SES is associated with health disparities, it follows that transgender and other gender minority people may experience a high burden

of adverse health outcomes due to this differential SES distribution. Gender minority communities are marginalized and low SES increases marginalization for gender minority people. Ensuring that low SES, vulnerable gender minority communities are “counted” is key to addressing the social determinants of health and to getting a fuller picture of the population health of transgender and other gender minority people.

Sampling bias

The socioeconomic disparity among transgender and other gender minority people versus cisgender people has implications for sampling. Namely, traditional population-based sampling methods may not be most efficient to understand the health needs of low SES gender minority people. If, among those with economic disadvantages, transgender and other gender minority people are disproportionately not living in traditional housing units typically considered for inclusion in population-based surveys (i.e., if they are homeless or unstably housed), then they are less likely to be included in those surveys. This exclusion creates selection bias whereby the sampling strategy disproportionately captures gender minority respondents who have higher SES, thus under-representing lower SES individuals in that population.

Multiple sampling strategies and multiple survey modes may improve data collection efforts and accuracy. For example, an analysis of the National Transgender Discrimination Survey (NTDS) conducted by Reisner et al. (2014) found that respondents sampled in-person differed significantly from those sampled online, including on sociodemographic characteristics and health indicators. In-person respondents

were disproportionately lower SES (lower educational attainment and low income) compared to online respondents (see Chapter 3 for additional details and citations). In-person respondents were also more likely to self-report worse health compared to online responders, such as substance use to cope with mistreatment (42.7% vs 24.4%; age-adjusted RR=2.18; 1.76, 2.69; $p<0.0001$).

Table 3 presents a multivariable model with substance use to cope with mistreatment as a binary outcome. Education and income were each associated with substance use: having a college degree or graduate degree were each protective of substance use compared to having some college education. Low (<\$19,999) or middle income (\$20,000 - \$49,999) categories were each associated with increased

probability of substance use to cope, compared to the high income category (\$50,000 - \$99,999). In addition, in-person vs. online data collection was independently associated with substance use to cope, even after controlling for other factors in the model. Being reached in-person was associated with 67% higher risk of substance use than being sampled online. This trend suggests reaching transgender and other gender minority people face-to-face through community-based linkages may reach those who are most highly vulnerable and of lowest SES; although alternative methods to draw probability samples (e.g., on-line respondent-driven sampling) likely need to be used in geographically dispersed areas and regions due to cost considerations.

TABLE 3. Multivariable model: Substance use to cope with mistreatment.

	SUBSTANCE USE TO COPE	
	Adj RR (95% CI)	p-value
Data Collection Method (Ref: Online)		<0.0001
In-Person	1.67 (1.31, 2.14)	
Age (Ref: 25 to 44)		0.005
18 to 24	0.98 (0.84, 1.14)	
45 to 64	0.80 (0.68, 0.94)	
65 and older*	0.46 (0.26, 0.81)	
Gender (Ref: Male-to-Female)		0.008
Male Assigned Birth Sex Gender Non-conforming	0.89 (0.75, 1.06)	
Female-to-Male	1.21 (1.02, 1.44)	
Female Assigned Birth Sex Gender Non-conforming	1.15 (0.94, 1.41)	
Race/Ethnicity (Ref: White Non-Hispanic)		0.019
People of Color	1.19 (1.03, 1.37)	
Educational Attainment (Ref: Some College)		0.001
< High School Diploma	0.93 (0.77, 1.11)	
College Degree	0.78 (0.68, 0.91)	
Graduate Degree	0.74 (0.62, 0.88)	
Income (Ref: High (\$50,000-\$99,999))		<0.0001
Low (< \$19,999)	1.48 (1.25, 1.75)	
Middle (\$20,000-\$49,999)	1.44 (1.24, 1.67)	
Health Insurance (Ref: Private Insurance)		0.0005
Public	1.10 (0.93, 1.30)	
Uninsured	1.36 (1.16, 1.59)	
Geographic Region (Ref: Midwest/West)		0.135
New England/Mid Atlantic	0.90 (0.77, 1.04)	
South	0.89 (0.75, 1.06)	
California	1.08 (0.90, 1.29)	
Gender Non-conformity^ (Ref: Moderate)		<0.0001
High	1.39 (1.20, 1.60)	
Low	0.77 (0.65, 0.90)	
Gender Affirmation (Ref: No Medical Gender Affirmation)		<0.0001
Hormones	1.57 (1.35, 1.83)	
Surgery	0.91 (0.79, 1.05)	

RR= Risk Ratio. 95% CI=95% Confidence Interval. The selected referent for comparisons (1.00) is the group with the largest n to ensure stability of estimates. Multivariable model includes all variables presented in the table. The p-values are from multi-parameter Wald tests (global omnibus tests) testing whether there is an overall effect of data collection method, age, gender identity, race, education, income, health insurance, gender non-conformity, region, and gender affirmation. ^Gender Non-conformity ("People Can Tell That I Am Trans/Gender Non-conforming If I Don't Tell Them"): High (always or most of the time), Moderate (sometimes or occasionally), Low (never).

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Considerations for Identifying Intersex Respondents on Population-Based Surveys

The measures in this report utilize terms and mechanisms to identify transgender and other gender minority respondents and are not recommended as a way to identify intersex people on surveys. Intersex people are born with (or develop naturally in puberty) genitals, reproductive organs, and/or chromosomal patterns that do not fit standard definitions of male or female (Viloria, 2013). In the United States, intersex infants and minors are often (but not always) diagnosed with a medically-determined intersex condition or "Difference of Sex Development" (DSD) (Hughes et al., 2006). However, some people use the term "intersex" as an identity label, sometimes even in the absence of such inborn physical characteristics. Therefore, research is recommended to develop survey questions and survey designs that will identify intersex people/people with DSDs on population-based surveys.

Three major issues in identifying intersex people/people with DSDs on surveys are as follows:

- 1) Lack of identification with the term "intersex" among all intersex people/people with DSDs

One concern is that including the term "intersex" in questions that utilize a list of gender identity terms may not capture all intersex people/people with DSDs. Some people who have intersex traits or DSDs do not identify with or use the term "intersex" to describe themselves (AIC, n.d.; Astorino & Viloria, 2012; Hinkle & Viloria, 2012). Furthermore, some who do self-identify as intersex do not utilize the term "intersex" to describe their sex, gender, and/or gender identity.

- 2) Use of "intersex" as an identity among people who are not intersex/have DSDs

A second concern is that some people who may select "intersex" as an identity on a survey may not be intersex/have an intersex condition or DSD. Consider, for example, one respondent to the National Transgender Discrimination Survey (NTDS) who had selected that they "somewhat identify" with intersex as an identity term.⁶ This respondent explained,

When I marked that I could be somewhat described as 'transgender' and 'intersex,' that wasn't because I identify as transgender, or have been diagnosed with any physical intersex condition...I see having a male brain

and a female body as a type of intersex condition, albeit one with very different challenges than those that face someone with a physical intersex condition.

It should be noted that the NTDS included “intersex” in a list of gender identity terms and asked transgender and gender non-conforming respondents whether they strongly, somewhat, or not at all identified with the listed terms (Grant et al., 2011).

It should be noted that the NTDS included “intersex” in a list of gender identity terms and asked transgender and gender non-conforming respondents whether they strongly, somewhat, or not at all identified with the listed terms (Grant et al., 2011). The NTDS approach is not recommended for use in population-based surveys as it remains unclear who would select themselves into an “intersex” identity on a survey, particularly as intersex is not, by definition, a gender identity, but a difference in congenital sex. If “intersex” is presented in a survey as a gender identity option, the resulting sample may include individuals without physical intersex traits or DSDs. Therefore, researchers must utilize measures that will clearly identify respondents from the population of interest, whether that population is defined by a certain identity or physical characteristics.

Additionally, NTDS respondents had to answer affirmatively that they identified as transgender or gender non-conforming in order to continue to the gender identity questions in the NTDS, including the question that listed “intersex” as an identity. This is inappropriate as a means to identify intersex people/people with DSDs because the vast majority would not answer affirmatively to being either transgender or gender non-conforming (Hinkle & Vioria, 2012; Tamar-Mattis, 2013).

- 3) “Intersex” is not included as an option for sex on birth certificate forms

As intersex is a difference in congenital sex, it may

seem appropriate to include the term “intersex” in questions regarding sex at birth. However, “intersex” is not a sex that is assigned at birth and it is currently not a sex designation allowed on birth certificates across the United States. Currently, intersex people/people with DSDs are assigned “male” or “female” on their birth certificates. For many people, “intersex” or “DSD” describes a medical diagnosis attributed to an individual at or after birth, but is not a sex designation assigned at birth. Therefore, items asking assigned sex at birth should not include intersex as an answer option.

Recommendation for Future Research

Research is recommended to develop survey questions and survey designs that will identify intersex people/people with DSDs on population-based surveys. Very few examples exist of questions that would identify intersex people/people with DSDs on surveys of any kind. Promising measures for testing are currently lacking and new measures for surveys will need to be developed.

A question used in a public policy needs assessment of the transgender community in Washington, DC, could provide some guidance for development of questions that identify intersex people/people with DSDs. The question was worded as such: “Have you ever been diagnosed by a medical doctor with an intersex condition or a ‘Disorder of Sex Development?’” Please note that “Disorder” is now replaced with “Difference” when referring to this diagnosis.

In order to capture all intersex participants and use appropriate terminology, we would recommend further research on a question that read: “Have you ever been diagnosed by a medical doctor with an intersex condition or a ‘Difference of Sex Development’ or were you born with (or developed naturally in puberty) genitals, reproductive organs, and/or chromosomal patterns that do not fit standard definitions of male or female?” This question could follow the “sex assigned at birth” question in the two-step gender identity measure.

⁶The National Transgender Discrimination Survey was conducted by the National Gay and Lesbian Task Force and the National Center for Transgender Equality. Additional analysis of the qualitative responses to the NTDS was conducted by Jody L. Herman. The authors thank the National Gay and Lesbian Task Force and the National Center for Transgender Equality for the use of the NTDS dataset

Alternately, a definition could be provided, much in the way the Massachusetts BRFSS measure provides a definition of transgender (see Chapter 2), as in the following measure:

Some people are assigned male or female at birth but are born with sexual anatomy, reproductive organs, and/or chromosome patterns that do not fit the typical definition of male or female. This physical condition is known as intersex. Are you intersex?

- Yes, an intersex man
- Yes, an intersex woman
- Yes, an intersex person, gender non-conforming
- No

These and other potential ways to identify intersex people on population-based surveys need to be further explored.⁷

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⁷In addition, research is needed on measures that would accurately identify intersex people through other health information sources (e.g., medical records).

CHAPTER 5

IDENTIFYING TRANSGENDER AND OTHER GENDER MINORITY RESPONDENTS ON POPULATION-BASED SURVEYS: CONSIDERATIONS FOR ANALYSIS

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The relatively small samples usually associated with transgender and other gender minority populations coupled with distinctive issues associated with the measurement of sex and gender on surveys create a variety of analytical challenges for researchers. This chapter summarizes some of these challenges and, where possible, identifies analytical strategies to improve the accuracy and validity of analyses.

Measurement error

In the absence of sex and gender-related items that allow for identification of transgender and other gender minority respondents on population-based surveys, it is difficult to confidently estimate expected sample sizes of this group in particular surveys. Measurement for transgender and other gender minority populations should adopt as many strategies as are possible within a particular survey for reducing measurement error. Even small errors in the general population that lead to misclassification of some respondents as a gender minority can result in samples that include a large portion of respondents who are not actually transgender or any other gender minority (i.e., “false positives”). Therefore, researchers who analyze data that identifies transgender and other gender minority individuals should always consider the possibility of this type of error in their analyses.

This type of measurement error is referred to as a specificity error. In this case, cisgender respondents accidentally indicate on the survey that they are transgender or another gender minority. To illustrate this concern, let us assume that 1% of the population is actually transgender. If 99% of respondents are cisgender, but one in every 99 cisgender respondents mistakenly indicates that they are transgender, then the observed sample of transgender respondents would be comprised of roughly half actual transgender respondents and half misclassified cisgender respondents. Specificity errors due to misclassification bias represent a serious threat to collecting accurate data on all small populations, including the transgender population.

One of the factors that contribute to specificity error is the lack of understanding associated with the concept of gender identity in the general population. In a 2008 cognitive testing study, non-LGBT respondents were asked to define the word transgender: a significant percent could not provide an accurate definition (Scout, 2008). Notably, during these discussions about the definition of transgender, the most likely cultural referent that non-LGBT respondents were able to cite was the example of a person who transitioned from male to female. If a definition of transgender is provided in language, as in the Massa-

chusetts BRFSS, we advise using some version of this male to female example since it is the most widely recognized. But overall, the challenge of collecting and analyzing these data is that we are attempting to measure a phenomenon about which there is substantial confusion in the general population – where even minor confusion on the part of respondents from the general population may undermine the accuracy of the data. Thus the construction of gender-related measures requires extremely close attention to the phrasing of the question(s). For this reason, we also strongly encourage new question phrasings be tested using techniques that include cognitive interviewing and field tests whenever possible. Each of the measures listed in this report has undergone testing to assess if the measure minimizes specificity errors.

Researchers who analyze data on transgender and other gender minority respondents should consider conducting sensitivity tests to assess the validity of the collected sample and the extent to which it may be prone to specificity errors. These types of analyses can be difficult in the absence of comparable population-based data from other surveys that analysts could use to consider the degree to which characteristics of a particular sample of transgender respondents are similar to or vary from those in other survey samples.

Another analytical concern is sensitivity errors. This term refers to the potential that transgender and other gender minority individuals would not indicate they are transgender or another gender minority in their responses. This type of response can occur for a variety of reasons including misunderstandings of language and terms used in survey questions that do not include the specific labels that some may use to identify themselves. While the term “transgender” was originally intended to represent the many different forms of gender variance, after approximately twenty years since the term began to be widely used (Scout, 2005), not all transgender or other gender minority individuals are comfortable identifying with it. Age, race/ethnicity, and socioeconomic status are some of the factors that affect the willingness of some individuals who are part of the full spectrum of

gender variance to identify as transgender. This obstacle is one important reason for the recommendation of the “two step” approach that measures both assigned sex at birth and current gender identity. This strategy is designed to allow identification of transgender and other gender minority individuals who would not be captured through use of a single-item question measuring only gender identity.

In surveys that include questions focused primarily on measuring transgender as an identity status, researchers and analysts should be aware that some portion of individuals who could be classified as transgender or another gender minority may not be identifiable by that measure. There are likely no simple analytic solutions to this issue within a single dataset, but it can be important in how scholars frame analyses and results. Transgender identity is a conceptually distinctive construct from the construct used in the two-step approach that compares assigned sex at birth and gender identity to identify transgender and other gender minority respondents. This difference should be highlighted and considered by those analyzing data where measurement focuses more on transgender identity.

Prevalence and sample sizes

To date, no national population-based surveys offer an estimate of the portion of individuals who can be classified as transgender or other gender minorities in the United States. A few population-based studies from state-level surveys in the U.S. indicate that likely less than one percent of adults will be classified as transgender (Conron et al., 2012; Gates, 2011). Additional population-based data collection to identify transgender respondents is necessary to refine expected prevalence and sample sizes. Prevalence may also vary based on the type of measure used to identify transgender and other gender minority respondents. For example, measures of gender expression and gender non-conformity may yield higher proportions of gender minority respondents than those focused on transgender identity alone (Conron et al., 2012; Wylie et al., 2010).

The relatively small samples of transgender and

other gender minority respondents that would be collected even in large population-based surveys mean that finding evidence of statistically significant differences in outcomes between gender minority and cisgender respondents can be difficult. This difficulty is because the margin of error that accompanies estimates of a particular characteristic of the small group is very large. The margin of error is a statistical range that accompanies estimates in population-based surveys. In most cases, the range indicates that, statistically, there is a 95% probability that the true prevalence of a particular characteristic in the population of interest falls within that range. Among small samples, this range tends to be very wide. When comparing a characteristic between two groups, this range is considered in the assessment of whether a particular difference is likely a true difference between the two populations (statistically significant) or if there is a strong possibility that the difference may simply be due to random variations that can occur in any data collection process. Relatively large margins of error around estimates of characteristics of transgender and other gender minority respondents mean that detecting statistically significant differences with other groups is more difficult.

This reason is what some survey administrators may give for not including questions that allow identification of transgender or other gender minority respondents. They argue that the analytic potential of the data is too limited to justify the inclusion of such questions. While this may be a legitimate concern for any individual survey, it is less problematic for surveys where independent population-based samples are collected on a regular basis, which is true of most of the large federal surveys described in Chapter 1. In these surveys, samples from multiple points in time can be combined to increase the sample sizes of transgender and other gender minority respondents to improve analytic capability. It is also important to note that response categories in questions that are routinely collected in population-based surveys produce samples that would be similar in size to estimates of the prevalence of transgender individuals. For example, the race question from the American Community Survey includes a category that

identifies Native Hawaiian and other Pacific Islander individuals that yields a prevalence of approximately 0.2% of the population (see <http://quickfacts.census.gov/qfd/states/00000.html>).

In the case of surveys like the BRFSS or YRBS, data with similar questions designed to identify transgender and other gender minority respondents may be collected across various jurisdictions (e.g., states, cities). It is also possible to combine these data to produce larger samples of transgender and other gender minority respondents. Researchers who take this approach should consider if survey items were consistent across surveys, and, if not, what differences might mean for interpretation of findings. This method can involve, for example, testing if the inclusion or exclusion of data from a particular jurisdiction that may have a question wording that differs from other jurisdictions affects basic patterns observed in the analyses. An absence of large changes can suggest that aggregated data are not unduly influenced by unique characteristics of samples within one particular survey.

Aggregating over jurisdictions also requires that analysts consider the degree to which the broad characteristics of the population (not just the gender minority population) are similar to or differ from national patterns. For example, samples drawn primarily from urban areas may produce findings that are driven by distinctive demographic and economic characteristics of urban residents that differ from the general population, and findings should be interpreted in that light.

It is also possible to aggregate data across independently sampled surveys. But again, analysts should consider possible differences across surveys that include sampling frames along with survey design, questions, and mode. For example, it is possible that decisions by transgender and other gender minority individuals about how to respond to sex and gender-related items on a survey may be affected by the broader content and purpose of the survey. To the extent that sex and gender-related questions may be seen as somewhat sensitive for transgender and other gender minority respondents,

their willingness to disclose may be different on a survey focused on assessing health than on a survey measuring political attitudes. In aggregating across surveys, analysts should always consider how patterns in data are affected by inclusion or

exclusion of data from particular surveys. Aggregation of data over time, space, and across surveys represents perhaps one of the best analytic strategies to overcome challenges associated with small samples of transgender and other gender minority respondents.

ANALYSIS OF TWO STEP VARIABLES

Several of the variable constructions iterated in this report require recoding in order to successfully analyze the variable. What follows is a schema showing the recoding categories indicated as a result of using a two-step variable such as the one below.

Example of questions used to implement a two-step approach to assess transgender status:

Step 1: What sex were you assigned at birth, on your original birth certificate?

- Male
- Female

Step 2: How do you describe your gender identity?













- Male
- Female
- Male-to-Female transgender (MTF)
- Female-to-Male transgender (FTM)
- Other gender identity (specify) _____

Gender identity refers to a person's internal sense of themselves (how they feel inside) as being male, female, transgender, or another gender. This may be different or the same than a person's assigned sex at birth.

Below is a visual schema developed by Reisner showing the above two-step approach in a two-by-five contingency table (Reisner, 2013). A transgender person endorsing a male sex assigned at birth may identify their current gender identity as female (cross-sex identity), male-to-female transgender, or another gender identity – all of these genders when

cross-classified with assigned birth sex can be counted as transgender. Further, differences by identity can be investigated, assuming adequate sample sizes. Thus, cross-sex identified respondents can be compared to transgender-identified respondents or to non-binary gender-identified people.

FIGURE 2. Visual schematic of the two-step method to cross-classify respondents by natal sex and current gender identity.

	ASSIGNED SEX AT BIRTH	
	MALE (infant designated a male sex on original birth certificate) 	FEMALE (infant designated a female sex on original birth certificate) 
Current Gender Identity		
Male	NON-TRANSGENDER MALE (male birth sex, male gender identity) 	CROSS-SEX IDENTIFIED TRANSGENDER FEMALE (female birth sex, male gender identity) 
Female	CROSS-SEX IDENTIFIED TRANSGENDER MALE (male birth sex, female gender identity) 	NON-TRANSGENDER FEMALE (female birth sex, female gender identity) 
Male-to-Female (MTF)	MALE-TO-FEMALE (MTF) (male birth sex, MTF gender identity) 	POTENTIAL MEASUREMENT ERROR (female birth sex, MTF gender identity) 
Female-to-Male (FTM)	POTENTIAL MEASUREMENT ERROR (male birth sex, FTM gender identity) 	FEMALE-TO-MALE (FTM) (female birth sex, FTM gender identity) 
Other Gender (Specify)	OTHER TRANSGENDER IDENTITY (male birth sex, other gender identity) 	OTHER TRANSGENDER IDENTITY (female birth sex, other gender identity) 

CONCLUSION

The findings and recommendations from this report highlight the need for improved measurement of sex and gender in population-based surveys that allow for identification of transgender and other gender minority respondents. The specifics of what measure or measures to use on a particular survey can depend on several factors: the mode of administration, the flexibility of the survey administrators to add multiple measures, the sample size, if it is a one-time or ongoing survey, the age range of the sample, and the analysis plan. But regardless of choices made in individual surveys, analysts must consider these factors in interpretation of findings regarding transgender and other gender minority populations.

We recommend using the most specific and detailed measures of sex and gender as are possible given the design and analysis plans of any particular survey. A larger sample and routine administration

of the same survey that allows aggregation of data over time and across survey locations, such as the case with the Behavioral Risk Factor Surveillance System or the Youth Risk Behavior Surveys, can yield relatively large samples of transgender and other gender minority respondents that allow for nuanced analyses. Aggregation of data can provide more detailed information about important subpopulations of gender minority individuals, including transgender people of color, and distinguishing between MTF and FTM health profiles. In surveys that provide the possibility of aggregation of data over time or place, the use of more detailed measures to identify transgender and other gender minority populations, like the recommended two-step approach, is particularly important since this approach is designed to capture the nuance of various subcategories of the gender minority population, which may otherwise be lost.

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