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UNITED STATES DISTRICT COURT

FOR THE DISTRICT OF ARIZONA

Russell B. Toomey,

Plaintiff,

v.

State of Arizona; Arizona Board of Regents, d/b/a University of Arizona, a governmental body of the State of Arizona; Ron Shoopman, In his official capacity as Chair of the Arizona Board of Regents; Larry Penley, in his official capacity as member of the Arizona Board of Regents; Ram Krishna, in his official capacity as Secretary of the Arizona Board of Regents; Bill Ridenour, in his official capacity as treasurer of the Arizona Board of Regents; Lyndel Manson, in her official capacity as member of the Arizona Board of Regents; Karrin Taylor Robson, in her official capacity as member of the Arizona Board of Regents; Jay Heiler, in his official capacity as member of the Arizona Board of Regents; Fred Duval, in his official capacity as member of the Arizona Board of Regents; Andy Tobin, in his official capacity as Director of the Arizona Department of Administration; Paul Shannon, in his official capacity as Acting Assistant Director of the Benefits Services Division of the Arizona Department of Administration,

Defendants

Case No. CV 19-0035-TUC-RM (LAB)

DEFENDANTS STATE OF ARIZONA, ANDY TOBIN, AND PAUL SHANNON'S RESPONSE TO PLAINTIFF'S SUPERSEDING MOTION FOR CLASS CERTIFICATION

I. INTRODUCTION

Plaintiff Russell B. Toomey, a transgender male, contends that the exclusion of "gender reassignment surgery" from Defendant State of Arizona's self-funded healthcare plan (the "Plan") for employees of the Arizona Board of Regents (the "Board") violates Title VII of the Civil Rights Act of 1964 ("Title VII") and the Equal Protection Clause of the Fourteenth Amendment. Plaintiff's Superseding Motion for Class Certification ("Plaintiff's Motion") seeks an order certifying this case as a class action and appointing Plaintiff's counsel as class counsel under Rule 23 of the Federal Rules of Civil Procedure.

Regarding the Title VII claim against Defendants State of Arizona and the Board, Plaintiff is seeking injunctive and declaratory relief on behalf of a class of current and future Board employees "who are or will be enrolled in the self-funded Plan controlled by the Arizona Department of Administration, and who have or will have medical claims for transition-related surgical care." (Pl.'s Mot. at 2.) Regarding the equal protection claim against Defendants Andy Tobin and Paul Shannon in their individual capacities, Plaintiff is seeking injunctive and declaratory relief on behalf of "[c]urrent and future individuals (including Arizona State employees and their dependents), who are or will be enrolled in the self-funded Plan controlled by the Arizona Department of Administration, and who have or will have medical claims for transition-related surgical care." (Pl.'s Mot. at 2.)

Defendants State of Arizona, Andy Tobin, and Paul Shannon (the "State Defendants") request that the Court deny Plaintiff's Motion because there is no factual basis for it to conclude that the proposed classes are so numerous that joinder of all their potential members is impracticable. Alternatively, even if Plaintiff could establish all of the necessary prerequisites for class certification under Rule 23(a), and he cannot establish the numerosity requirement here, the Court should exercise its discretion to deny certification as inappropriate in this case because any declaratory or injunctive relief will necessarily benefit all putative class members without the need to certify a class action and take on the accompanying burdens that a class action will entail.

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II. LAW AND ARGUMENT

A. Plaintiff Must Prove that Class Certification is Warranted

A class action is "an exception to the usual rule that litigation is conducted by and on behalf of the individual named parties only." *Califano v. Yamasaki*, 442 U.S. 682, 700–701 (1979). In order to justify a departure from the norm, "a Title VII class action, like any other class action, may only be certified if the trial court is satisfied, after a rigorous analysis, that the prerequisites of Rule 23(a) have been satisfied." *General Telephone Co. of Southwest v. Falcon*, 457 U.S. 147, 161 (1982). Class certification, like most issues arising under Rule 23, is committed in the first instance to the discretion of the district court. *Califano*, 442 at 703; *Montgomery v. Rumsfeld*, 572 F.2d 250, 255 (9th Cir. 1978).

As the party seeking class certification, Plaintiff "bears the burden of establishing that the proposed class meets the requirements of Rule 23." *Edwards v. First Am. Corp.*, 798 F.3d 1172, 1177 (9th Cir. 2015). The Supreme Court has explained that "Rule 23 does not set forth a mere pleading standard." *Wal-Mart Stores, Inc. v. Dukes*, 564 U.S. 338, 350 (2011). This means that "[a] party seeking class certification must affirmatively demonstrate his compliance with the Rule -- that is, he must be prepared to prove that there are *in fact* sufficiently numerous parties, common questions of law or fact, etc." *Id*. (emphasis in original); *see also Falcon*, 457 U.S. at 160 ("[A]ctual, not presumed, conformance with Rule 23(a) remains ... indispensable").

B. Plaintiff Has Failed to Satisfy the Numerosity Requirement

A putative class may be certified only if it "is so numerous that joinder of all members is impracticable." Fed. R. Civ. P. 23(a)(1). Although this numerosity requirement imposes no absolute limitations, it "requires examination of the specific facts of each case." *Gen. Tel. Co. of the Nw. v. EEOC*, 446 U.S. 318, 330 (1980). The Ninth Circuit has noted that courts generally "find the numerosity requirement satisfied when a class includes at least 40 members." *Rannis v. Recchia*, 380 Fed. Appx. 646, 651 (9th Cir. 2010). Smaller classes have, however, been deemed insufficient to establish numerosity. *See*, *e.g.*, *Harik v. California Teachers Ass'n*, 326 1042, 1051 (9th Cir. 2003) (vacating the certification of classes of seven, nine, and ten members because "[t]he Supreme Court has held fifteen is too small."); *Ikonen*

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v. Hartz Mountain Corp., 122 F.R.D. 258, 262 (S.D. Cal. 1988) ("As a general rule, classes of 20 are too small, classes of 20-40 may or may not be big enough depending on the circumstances of each case, and classes of 40 or more are numerous enough.").

In order to establish numerosity here, Plaintiff argues that he "must demonstrate – at most – that it is reasonable to believe based on general knowledge and common sense that (a) at least 40 current or future Board of Regents employees will be enrolled in the self-funded Plan and have medical claims for transition-related, (b) at least 40 current or future individuals (including Arizona State employees and their dependents) will be enrolled in the self-funded Plan and have medical claims for transition-related care." (Pl.'s Mot. at 3.) Although there are times when "general knowledge" and "common sense" may lead a court to conclude that a plaintiff has satisfied the numerosity requirement, as the Supreme Court has made clear, such a conclusion must be based on a "rigorous analysis" of the "specific facts" supporting that conclusion. Plaintiff's Motion, however, fails to identify any "specific facts" supporting a conclusion that anywhere near 40 individuals who are or will be enrolled in the Plan **will assert medical claims for gender reassignment surgery, not just claims for transition-related care as Plaintiff has framed it in his Motion**.

Plaintiff attempts to rely on his "first-hand knowledge and reasonable inferences from demographic data" to meet his burden of affirmatively demonstrating that there are in fact sufficiently numerous class members that joinder would be impracticable.[1] (Pl.'s Mot. at 4.) Even using Plaintiff's "general knowledge" and "common sense" standard, however, he has failed to establish numerosity by any reasonable measure.

[1] Plaintiff cites *Valenzuela v. Ducey*, No. CV-16-03072-PHX-DGC, 2017 WL 6033737 (D. Ariz. Dec. 6, 2017) for the proposition that he "is not limited to evidence that would be admissible under the Federal Rules of Evidence" when seeking class certification, but *Valenzuela* did not reach that conclusion. Although it recognized that "many cases hold that the rules of evidence are not applied strictly at the class certification stage," it cited a case questioning this conclusion and explained that it "need not wrestle with this issue" because the plaintiffs there had identified sufficient evidence to establish numerosity. *Id.* at *4 n.4. *See Zuniga v. Bernalillo Cty.*, 319 F.R.D. 640, 659 n.5 (D.N.M. 2016) (concluding that the Federal Rules of Evidence applied to class certification determinations).

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Regarding Plaintiff's first-hand knowledge, he submitted a declaration stating that he knows "of at least six other transgender employees at the University of Arizona or Arizona State University who are ineligible for gender reassignment surgery because of the exclusion." (Pl.'s Mot. Ex. A ¶ 16.) He also asserts, without any explanation or support, that to his knowledge "these employees have not made a claim with their insurance because they know it will be denied." (Pl.'s Mot. Ex. A ¶ 16.) The issue, of course, is not that these or any other employees are ineligible for "gender reassignment surgery" under the Plan. Everyone is ineligible for gender reassignment surgery under the Plan. The issue is whether there are at least 40 employees who "have or will have medical claims" for gender reassignment surgery. Plaintiff offers no *evidence*, first-hand or otherwise, that the six employees referred to in his declaration would pursue a claim for gender reassignment surgery if it was not excluded under the Plan. Specifically, he offers no support for his conclusion that, to his knowledge, these employees have not made a claim *because* they know it will be denied.

Plaintiff has failed to put forward any reliable estimate of the number of transgender individuals enrolled in the Plan let alone the number of transgender employees who will submit medical claims for gender reassignment surgery. This deficiency is particularly important here because of two undisputed facts based on Plaintiff's own allegations and the documentation he has cited in support of his class certification claims. First, we know that not all individuals with gender dysphoria seek or even require treatment. Second, even among those individuals who will require treatment for gender dysphoria, not all of them will seek or require gender reassignment surgery. According to Plaintiff's Amended Complaint, "transgender men and women *may* require treatment for gender dysphoria, the diagnostic term for the clinically significant emotional distress experienced as a result of the incongruence of one's gender with their assigned sex and the physiological developments associated with that sex." (Doc. 86 ¶ 27.) (emphasis added). The Amended Complaint also asserts that "[t]he widely accepted standards of care for treating gender dysphoria are published by the World Professional Association for Transgender Health ("WPATH")" and "*may* require medical steps to affirm one's gender identity." (Doc. 86 ¶ 28.) (emphasis added).

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WPATH's standards of care expressly provide that "[o]nly *some* gender-nonconforming people experience gender dysphoria at *some* point in their lives." (*See* WPATH Standards of Care for the Health of Transsexual, Transgender, and Gender-Nonconforming People Version 7, relevant excerpts attached as Exhibit A, at 5). As the WPATH standards further explain, treatment for gender dysphoria is individualized and "[w]hat helps one person alleviate gender dysphoria might be very different from what helps another person. This process may or may not involve a change in gender expression or body modifications." (Ex. A at 5.) Finally, the standards explain that "while many individuals need both hormone therapy and surgery to alleviate their gender dysphoria, others need only one of these treatment options and some need neither." (Ex. A at 8.) Plaintiff's declaration does not support a conclusion that all six of the employees referenced in his declaration would be class members because it does not contain any evidence that they are among the subclass of transgender individuals with gender dysphoria who (1) will require treatment and (2) who will request gender reassignment surgery as part of that treatment.

Nor does Plaintiff's reliance on purportedly "reasonable inferences from demographic data" advance his numerosity argument. Indeed, Plaintiff's assertion that "[d]emographic data indicates that the total number of class members could be over 1,000" is entirely based on a 2016 study from the Williams Institute purportedly showing that "approximately 0.62% of Arizonans identify as transgender." (Pl.'s Mot. at 4.) As described below, the Williams Institute study does not support the conclusion that Plaintiff has satisfied the numerosity requirement.

Initially, as the WPATH standards explain, "[f]ormal epidemiological studies on the incidence and prevalence of transsexualism and gender-nonconforming identities in general have not been conducted, and efforts to achieve realistic estimates are fraught with enormous difficulties." (Ex. A at 6.) Second, the prevalence of transsexualism and gender-nonconforming identities in the ten studies discussed by the WPATH standards ranged "from 1:11,900 to 1:45,000 for male-to-female individuals (MtF) and 1:30,400 to 1:200,000 for female-to-male (FtM) individuals." (Ex. A at 7.) These numbers are far lower than the

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Williams Institute's claim that 0.62% of all Arizonans identify as transgender and do not even consider the subclass of transgender individuals with gender dysphoria who will seek surgery. Third, the Williams Institute's estimate concerning Arizona was based on answers that individuals in 19 other states gave to the question whether they identified as transgender. (*See* The Williams Institute – How Many Adults Identify as Transgender in the United States? dated June 2016, attached as Exhibit B, at 7.) In other words, the Williams Institute reached its conclusion about the number of transgender individuals in Arizona without relying on any information provided by anyone who lives in Arizona. Finally, of the individuals in the 19 other states who chose to answer the question about being transgender, only 0.52% of them identified as transgender. (Ex. B at 7.)

Several of the cases cited in Plaintiff's Motion illustrate the significant difference between the specific facts proffered in those cases and the absence of facts offered here. For example, the court found that the plaintiff satisfied the numerosity requirement in *Hoffman v. Blattner Energy, Inc.*, 315 F.R.D. 324 (C.D. Cal. 2016), because he identified at least 23 employees, all of whom submitted declarations in support of the class certification motion, that fell within the proposed subclass. *Id*. at 337. Based on the existence of declarations from 23 employees that the defendant denied all of them meal breaks, the court found that it was reasonable "to conclude that there are other employees out of 1,229 who fall within the proposed subclass." *Id*. In *Valenzuela*, the defendants' own evidence showed that 43 people in addition to the plaintiffs were part of the proposed class. *Valenzuela*, 2017 WL 6033737 at *4. Finally, the court found that "an inference of future class members is reasonable" based on evidence that in addition to the 22 class members that the plaintiffs identified they "made a compelling case that the number is likely higher" given that there were hundreds of thousands of DACA recipients across the country in *Inland Empire – Immigrant Youth Collective v. Nielson*, 2018 WL 1061408, *7 (C.D. Cal. Feb. 26, 2018). Unlike in each of these cases, Plaintiff has failed to offer specific facts that would support a reasonable inference that the number of class members in either class even approaches 40. Consequently, the Court must deny Plaintiff's Motion.

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C. A Class Action is Inappropriate and Unnecessary Here

The Court may certify a class action only if Plaintiff has met his burden of showing that all the prerequisites in Rule 23(a) have been met and that at least one of the requirements in Rule 23(b) has been satisfied. Plaintiff seeks class certification under Rule 23(b)(2), which allows certification if "the party opposing the class has acted or refused to act on grounds that apply generally to the class, so that final injunctive relief or corresponding declaratory relief is appropriate respecting the class as a whole." Fed. R. Civ. P. 23(b)(2). The Court should decline to certify a class action here because any final injunctive relief or corresponding declaratory relief would not be appropriate respecting the class as a whole. Specifically, given the declaratory or injunctive relief that the Court could order on an individual basis for Plaintiff, there would be no meaningful additional benefit to any prospective class members from ordering relief to the class as a whole.

Several circuit courts have affirmed class certification denials under Rule 23(b)(2) when a class is not needed to obtain the same relief. *See, e.g., Galvan v. Levine*, 490 F.2d 1255 (2d Cir. 1973), *cert. denied*, 417 U.S. 936 (1974). The plaintiffs in *Galvan*, one of the leading cases adopting what has been referred to as the "necessity requirement," were two Puerto Ricans who were adversely affected by a New York policy denying unemployment compensation benefits to persons who left the New York labor market area and moved to an area of persistent, high unemployment. The plaintiffs alleged that, as applied, this policy was used to bar Puerto Ricans who, like themselves, worked in largely seasonal jobs in New York and returned to Puerto Rico when without work there and moved for class certification under Rule 23(b)(2). The Second Circuit affirmed the district court's denial of class certification finding that a class action was unnecessary: "insofar as the relief sought is prohibitory, an action seeking declaratory or injunctive relief against state officials on the ground of unconstitutionality of a statute or administrative practice is the archetype of one where class action designation is largely a formality, at least for the plaintiffs." *Id*. at 1261.

Other circuits, including the Ninth Circuit, have followed this approach. *See James v. Ball*, 613 F.2d 180, 186 (9th Cir. 1979), *reversed on other grounds*, *Ball v. James*, 451 U.S.

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355 (1981). *James* was an appeal from an action commenced in this Court challenging the constitutionality of Arizona statutes limiting voting in elections for directors of the Salt River Project Agricultural and Improvement and Power District (the District) to landowners with votes essentially apportioned to owned acreage. The plaintiffs were Arizona citizens excluded from voting because they either rented land or owned less than one acre of land within the District. The Ninth Circuit found that the district court did not abuse its discretion in denying class certification under Rule 23(b)(2) because "the relief sought will, as a practical matter, produce the same result as formal class-wide relief." *Id*. at 186. Consequently, the *James* court observed that the benefits of a class action under those circumstances "would not be significant." *Id*. *See also Sandford v. R.L. Coleman Realty Co.,* 573 F.2d 173, 178–79 (4th Cir. 1978); *Craft v. Memphis Light, Gas & Water Div.,* 534 F.2d 684, 686 (6th Cir. 1976).

The First Circuit has explained that it agrees "with those circuits which deny Rule 23(b)(2) certification where it is a formality or otherwise inappropriate" but prefers "not to speak of a 'necessity requirement,' since this suggests some kind of mechanical classification, whereas the justification for denying class certification rests on the particular circumstances." *Dionne v. Bouley*, 757 F.2d 1344, 1356 (1st Cir. 1985). In other words, "[o]ne factor that a court may properly take into account is the fact — if it be a fact — that the same relief can, for all practical purposes, be obtained through an individual injunction without the complications of a class action." *Id*. Given that Rule 23(b)(2) provides that maintaining a class action depends on the appropriateness of injunctive or corresponding declaratory relief with respect to the class as a whole, "when the same relief can be obtained without certifying a class, a court may be justified in concluding that class relief is not 'appropriate.'" *Id*. Consequently, the *Dionne* court affirmed the district court's "denial of class certification on the ground that any injunctive or declaratory relief will inure to the benefit of all those similarly situated." *Id*.

The Third Circuit recently adopted the First Circuit's approach to this issue in *Gayle v. Warden Monmouth Cnty. Corr. Inst.*, 838 F.3d 297 (3d Cir. 2016). Although it held that "necessity is not a freestanding requirement justifying the denial of class certification," it noted

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that "it may be considered to the extent it is relevant to the enumerated Rule 23 criteria, including 'that final injunctive relief or corresponding declaratory relief [be] appropriate respecting the class as a whole.'" *Id*. at 310. Consequently, the *Gayle* court explained that "there may be circumstances where class certification is not appropriate because in view of the declaratory or injunctive relief ordered on an individual basis, there would be no meaningful additional benefit to prospective class members in ordering classwide relief." *Id*.

Both *Dionne* and *Gayle* also recognized that there may "be situations where a class certification under Rule 23(b)(2) will arguably be unnecessary, but where other considerations may render a denial of certification improper, such as the risk of mootness, the possibility of a defendant's non-acquiescence in the court's decision, or where class certification would not burden the court." *Id.; Dionne*, 757 F.2d at 1356. Here, however, there is no indication that Plaintiff's claims will become moot (he has already been denied precertification for gender reassignment surgery), that the State Defendants will not comply with any Court order, or that a class action would not unnecessarily burden the Court. Consequently, this Court should follow *Dionne*, *Gayle*, and *James* and deny Plaintiff's Motion because any declaratory or injunctive relief ordered on Plaintiff's behalf will necessarily benefit all putative class members in both of Plaintiff's proposed classes.

III. CONCLUSION

The Court should deny Plaintiff's Motion because he has failed to establish that his proposed classes meet all the requirements of Rule 23(a). Specifically, he failed to identify any "specific facts" from which the Court could conclude that the putative class members of either of his proposed classes are so numerous that joinder would be impracticable. Alternatively, the Court should exercise its discretion to deny Plaintiff's Motion under Rule 23(b)(2) because it would be inappropriate in that any declaratory or injunctive relief ordered on Plaintiff's behalf will necessarily benefit all putative class members in both of Plaintiff's proposed classes.

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DATED this 20th day of April 2020.

s/ Peter C. Prynkiewicz
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I hereby certify that I electronically transmitted the attached document to the Clerk's Office using the CM/ECF System for filing and transmittal of a Notice of Electronic Filing to the following CM/ECF registrants, and mailed a copy of same to the following if non-registrants, this 20th day of April 2020:

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EXHIBIT A

WPATH WORLD PROFESSIONAL ASSOCIATION for TRANSGENDER HEALTH

www.wpath.org

Standards of Care

for the Health of Transsexual, Transgender, and Gender-Nonconforming People

The World Professional Association for Transgender Health

Version 7

Gender Nonconformity Is Not the Same as Gender Dysphoria

Gender nonconformity refers to the extent to which a person's gender identity, role, or expression differs from the cultural norms prescribed for people of a particular sex (Institute of Medicine, 2011). *Gender dysphoria* refers to discomfort or distress that is caused by a discrepancy between a person's gender identity and that person's sex assigned at birth (and the associated gender role and/or primary and secondary sex characteristics) (Fisk, 1974; Knudson, De Cuypere, & Bockting, 2010b). Only *some* gender-nonconforming people experience gender dysphoria at *some* point in their lives.

Treatment is available to assist people with such distress to explore their gender identity and find a gender role that is comfortable for them (Bockting & Goldberg, 2006). Treatment is individualized: What helps one person alleviate gender dysphoria might be very different from what helps another person. This process may or may not involve a change in gender expression or body modifications. Medical treatment options include, for example, feminization or masculinization of the body through hormone therapy and/or surgery, which are effective in alleviating gender dysphoria and are medically necessary for many people. Gender identities and expressions are diverse, and hormones and surgery are just two of many options available to assist people with achieving comfort with self and identity.

Gender dysphoria can in large part be alleviated through treatment (Murad et al., 2010). Hence, while transsexual, transgender, and gender-nonconforming people may experience gender dysphoria at some points in their lives, many individuals who receive treatment will find a gender role and expression that is comfortable for them, even if these differ from those associated with their sex assigned at birth, or from prevailing gender norms and expectations.

Diagnoses Related to Gender Dysphoria

Some people experience gender dysphoria at such a level that the distress meets criteria for a formal diagnosis that might be classified as a mental disorder. Such a diagnosis is not a license for stigmatization or for the deprivation of civil and human rights. Existing classification systems such as the *Diagnostic Statistical Manual of Mental Disorders (DSM)* (American Psychiatric Association, 2000) and the *International Classification of Diseases* (*ICD*) (World Health Organization, 2007) define hundreds of mental disorders that vary in onset, duration, pathogenesis, functional disability, and treatability. All of these systems attempt to classify clusters of symptoms and conditions, not the individuals themselves. A disorder is a description of something with which a person might struggle, not a description of the person or the person's identity.

Thus, transsexual, transgender, and gender-nonconforming individuals are not inherently disordered. Rather, the distress of gender dysphoria, when present, is the concern that might be diagnosable and for which various treatment options are available. The existence of a diagnosis for such dysphoria often facilitates access to health care and can guide further research into effective treatments.

Research is leading to new diagnostic nomenclatures, and terms are changing in both the *DSM* (Cohen-Kettenis & Pfäfflin, 2010; Knudson, De Cuypere, & Bockting, 2010b; Meyer-Bahlburg, 2010; Zucker, 2010) and the *ICD*. For this reason, familiar terms are employed in the *SOC* and definitions are provided for terms that may be emerging. Health professionals should refer to the most current diagnostic criteria and appropriate codes to apply in their practice areas.

IV
Epidemiologic Considerations

Formal epidemiologic studies on the incidence[III] and prevalence[IV] of transsexualism specifically or transgender and gender-nonconforming identities in general have not been conducted, and efforts to achieve realistic estimates are fraught with enormous difficulties (Institute of Medicine, 2011; Zucker & Lawrence, 2009). Even if epidemiologic studies established that a similar proportion of transsexual, transgender, or gender-nonconforming people existed all over the world, it is likely that cultural differences from one country to another would alter both the behavioral expressions of different gender identities and the extent to which gender dysphoria—distinct from one's gender identity—is actually occurring in a population. While in most countries, crossing normative gender boundaries generates moral censure rather than compassion, there are examples in certain cultures of gender-nonconforming behaviors (e.g., in spiritual leaders) that are less stigmatized and even revered (Besnier, 1994; Bolin, 1988; Chiñas, 1995; Coleman, Colgan, & Gooren, 1992; Costa & Matzner, 2007; Jackson & Sullivan, 1999; Nanda, 1998; Taywaditep, Coleman, & Dumronggittigule, 1997).

For various reasons, researchers who have studied incidence and prevalence have tended to focus on the most easily counted subgroup of gender-nonconforming individuals: transsexual individuals who experience gender dysphoria and who present for gender-transition-related care at specialist gender clinics (Zucker & Lawrence, 2009). Most studies have been conducted in European countries such as Sweden (Wålinder, 1968, 1971), the United Kingdom (Hoenig & Kenna, 1974),

III **incidence**—the number of new cases arising in a given period (e.g., a year)
IV **prevalence**—the number of individuals having a condition, divided by the number of people in the general population

the Netherlands (Bakker, Van Kesteren, Gooren, & Bezemer, 1993; Eklund, Gooren, & Bezemer, 1988; van Kesteren, Gooren, & Megens, 1996), Germany (Weitze & Osburg, 1996), and Belgium (De Cuypere et al., 2007). One was conducted in Singapore (Tsoi, 1988).

De Cuypere and colleagues (2007) reviewed such studies, as well as conducted their own. Together, those studies span 39 years. Leaving aside two outlier findings from Pauly in 1965 and Tsoi in 1988, ten studies involving eight countries remain. The prevalence figures reported in these ten studies range from 1:11,900 to 1:45,000 for male-to-female individuals (MtF) and 1:30,400 to 1:200,000 for female-to-male (FtM) individuals. Some scholars have suggested that the prevalence is much higher, depending on the methodology used in the research (e.g., Olyslager & Conway, 2007).

Direct comparisons across studies are impossible, as each differed in their data collection methods and in their criteria for documenting a person as transsexual (e.g., whether or not a person had undergone genital reconstruction, versus had initiated hormone therapy, versus had come to the clinic seeking medically supervised transition services). The trend appears to be towards higher prevalence rates in the more recent studies, possibly indicating increasing numbers of people seeking clinical care. Support for this interpretation comes from research by Reed and colleagues (2009), who reported a doubling of the numbers of people accessing care at gender clinics in the United Kingdom every five or six years. Similarly, Zucker and colleagues (2008) reported a four- to five-fold increase in child and adolescent referrals to their Toronto, Canada clinic over a 30-year period.

The numbers yielded by studies such as these can be considered minimum estimates at best. The published figures are mostly derived from clinics where patients met criteria for severe gender dysphoria and had access to health care at those clinics. These estimates do not take into account that treatments offered in a particular clinic setting might not be perceived as affordable, useful, or acceptable by all self-identified gender dysphoric individuals in a given area. By counting only those people who present at clinics for a specific type of treatment, an unspecified number of gender dysphoric individuals are overlooked.

Other clinical observations (not yet firmly supported by systematic study) support the likelihood of a higher prevalence of gender dysphoria: (i) Previously unrecognized gender dysphoria is occasionally diagnosed when patients are seen with anxiety, depression, conduct disorder, substance abuse, dissociative identity disorders, borderline personality disorder, sexual disorders, and disorders of sex development (Cole, O'Boyle, Emory, & Meyer III, 1997). (ii) Some crossdressers, drag queens/kings or female/male impersonators, and gay and lesbian individuals may be experiencing gender dysphoria (Bullough & Bullough, 1993). (iii) The intensity of some people's gender dysphoria fluctuates below and above a clinical threshold (Docter, 1988). (iv) Gender nonconformity among FtM individuals tends to be relatively invisible in many cultures, particularly to Western health

professionals and researchers who have conducted most of the studies on which the current estimates of prevalence and incidence are based (Winter, 2009).

Overall, the existing data should be considered a starting point, and health care would benefit from more rigorous epidemiologic study in different locations worldwide.

V

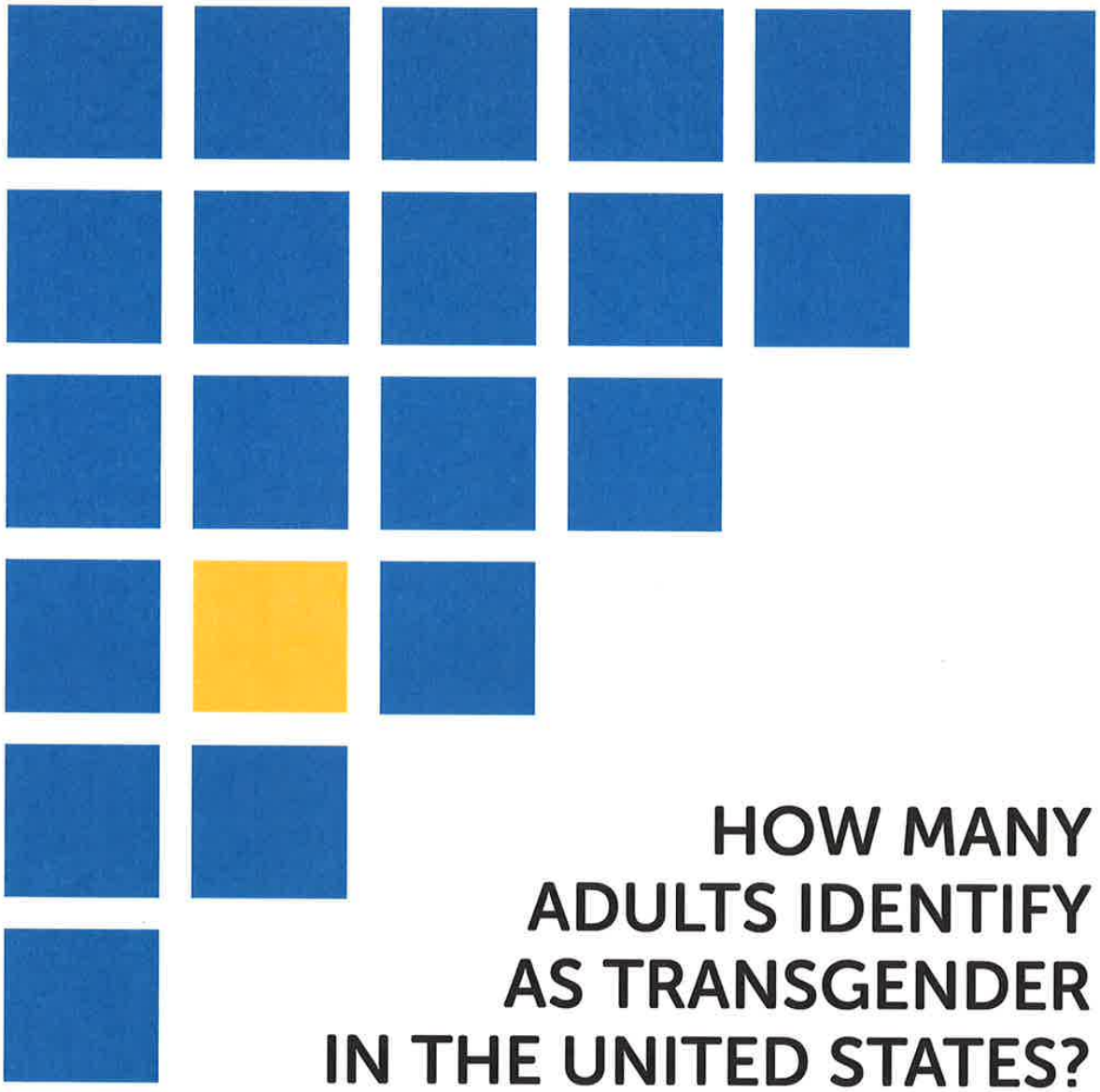
Overview of Therapeutic Approaches for Gender Dysphoria

Advancements in the Knowledge and Treatment of Gender Dysphoria

In the second half of the 20th century, awareness of the phenomenon of gender dysphoria increased when health professionals began to provide assistance to alleviate gender dysphoria by supporting changes in primary and secondary sex characteristics through hormone therapy and surgery, along with a change in gender role. Although Harry Benjamin already acknowledged a spectrum of gender nonconformity (Benjamin, 1966), the initial clinical approach largely focused on identifying who was an appropriate candidate for sex reassignment to facilitate a physical change from male to female or female to male as completely as possible (e.g., Green & Fleming, 1990; Hastings, 1974). This approach was extensively evaluated and proved to be highly effective. Satisfaction rates across studies ranged from 87% of MtF patients to 97% of FtM patients (Green & Fleming, 1990), and regrets were extremely rare (1–1.5% of MtF patients and <1% of FtM patients; Pfäfflin, 1993). Indeed, hormone therapy and surgery have been found to be medically necessary to alleviate gender dysphoria in many people (American Medical Association, 2008; Anton, 2009; World Professional Association for Transgender Health, 2008).

As the field matured, health professionals recognized that while many individuals need both hormone therapy and surgery to alleviate their gender dysphoria, others need only one of these treatment options and some need neither (Bockting & Goldberg, 2006; Bockting, 2008; Lev, 2004). Often with the help of psychotherapy, some individuals integrate their trans- or cross-gender feelings into the gender role they were assigned at birth and do not feel the need to feminize or masculinize their body. For others, changes in gender role and expression are sufficient to alleviate

EXHIBIT B



HOW MANY ADULTS IDENTIFY AS TRANSGENDER IN THE UNITED STATES?

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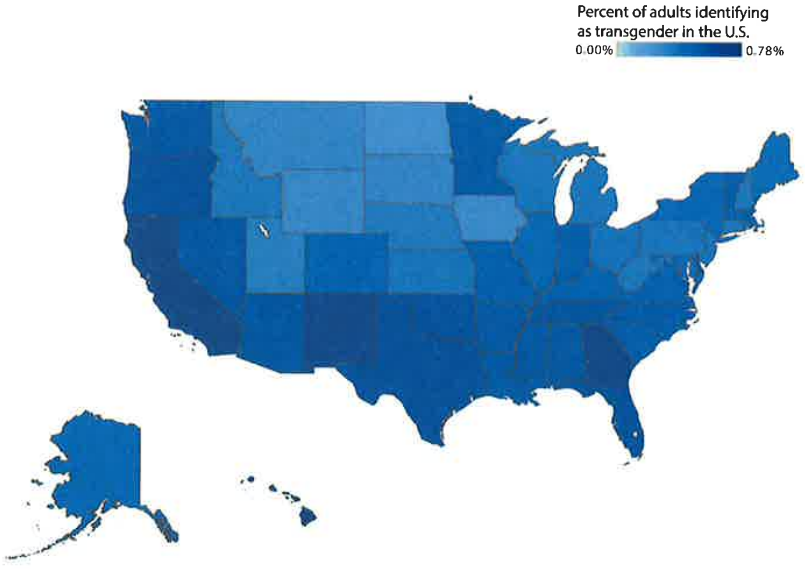
INTRODUCTION AND SUMMARY

Population-based surveys, meaning those that are designed to allow researchers to generalize findings to the population, rarely ask questions to identify transgender people and, therefore, cannot be used to provide estimates of the size and characteristics of the transgender population. The federal government administers several large, national population-based surveys like the American Community Survey and the National Health Interview Survey that track the demographics, health and well-being of U.S. residents. Unfortunately, these surveys do not currently measure gender identity.[1] However, there are several state-level population-based surveys that identify transgender respondents and can be used to estimate the size and characteristics of the transgender population.

In 2011, Gary J. Gates utilized two state-level population-based surveys that collected data from 2003 in California and from 2007 and 2009 in Massachusetts to estimate that 0.3% of the U.S. adult population, roughly 700,000 adults, identified as transgender.[2] Since then, more state-level data sources have emerged that allow us to utilize an estimation procedure that would not have been possible with the limited data available in 2011. Compared to the data used in Gates' study, these new data sources provide more recent data (2014), larger sample sizes, and more detailed information about respondents. This allows for the development of more recent, detailed, and statistically robust estimates of the percentage and number of adults in the United States who identify as transgender.

This report utilizes data from the CDC's Behavioral Risk Factor Surveillance System (BRFSS) to estimate the percentage and number of adults who identify as transgender nationally and in all 50 states.[3] We find that 0.6% of U.S. adults identify as transgender. This figure is double the estimate that utilized data from roughly a decade ago and implies that an estimated 1.4 million adults in the U.S. identify as transgender.[4] State-level estimates of adults who identify as transgender range from 0.3% in North Dakota to 0.8% in Hawaii.[5] In addition, due to current state-level policy debates that specifically target and affect transgender students, we provide estimates of the number of adults who identify as transgender by age. The youngest age group, 18 to 24 year olds, is more likely than older age groups to identify as transgender.

Figure 1. Percent of Adults Who Identify as Transgender in the United States



National and State-level Estimates of Transgender-Identified Adults

An estimated 0.6% of adults, about 1.4 million, identify as transgender in the United States. States vary in the percentage of residents who identify as transgender (See Table 1). Hawaii has the highest percentage of adults who identify as transgender, approximately 0.8% of adults, and North Dakota has the lowest percentage, at 0.3%. The District of Columbia is notable for its relatively high percentage of transgender-identified adults (2.8%).[6] Twenty states and the District of Columbia are estimated to have a higher percentage of transgender-identified adults than the national average.

Table 1. Estimated Population of Adults Who Identify as Transgender by State of Residence

STATE	POPULATION	PERCENT	RANK
United States of America	1,397,150	0.58%	-
Alabama	22,500	0.61%	15
Alaska	2,700	0.49%	33
Arizona	30,550	0.62%	12
Arkansas	13,400	0.60%	18
California	218,400	0.76%	2
Colorado	20,850	0.53%	27
Connecticut	12,400	0.44%	37
Delaware	4,550	0.64%	9
District of Columbia[7]	14,550	2.77%	-
Florida	100,300	0.66%	6
Georgia	55,650	0.75%	4
Hawaii	8,450	0.78%	1
Idaho	4,750	0.41%	43
Illinois	49,750	0.51%	30
Indiana	27,600	0.56%	23
Iowa	7,400	0.31%	49
Kansas	9,300	0.43%	41
Kentucky	17,700	0.53%	26
Louisiana	20,900	0.60%	17
Maine	5,350	0.50%	31
Maryland	22,300	0.49%	32
Massachusetts	29,900	0.57%	22
Michigan	32,900	0.43%	40
Minnesota	24,250	0.59%	20
Mississippi	13,650	0.61%	14
Missouri	25,050	0.54%	25
Montana	2,700	0.34%	47
Nebraska	5,400	0.39%	44
Nevada	12,700	0.61%	13

HOW MANY ADULTS IDENTIFY AS TRANSGENDER IN THE UNITED STATES? 4

STATE	POPULATION	PERCENT	RANK
New Hampshire	4,500	0.43%	39
New Jersey	30,100	0.44%	36
New Mexico	11,750	0.75%	3
New York	75,600	0.51%	29
North Carolina	44,750	0.60%	16
North Dakota	1,650	0.30%	50
Ohio	39,950	0.45%	34
Oklahoma	18,350	0.64%	8
Oregon	19,750	0.65%	7
Pennsylvania	43,800	0.44%	35
Rhode Island	4,250	0.51%	28
South Carolina	21,000	0.58%	21
South Dakota	2,150	0.34%	46
Tennessee	31,200	0.63%	10
Texas	125,350	0.66%	5
Utah	7,200	0.36%	45
Vermont	3,000	0.59%	19
Virginia	34,500	0.55%	24
Washington	32,850	0.62%	11
West Virginia	6,100	0.42%	42
Wisconsin	19,150	0.43%	38
Wyoming	1,400	0.32%	48

Estimates of Transgender-Identified Adults by Age

Prior research suggests that individuals who identify as transgender are younger, on average, than non-transgender individuals.[8] As expected, we find that younger adults are more likely than older adults to identify as transgender. An estimated 0.7% of adults between the ages of 18 and 24 identify as transgender. Lower percentages of older adults identify as transgender, with 0.6% of adults age 25 to 64 and 0.5% of adults age 65 or older identifying as transgender.

Table 2. Estimated Population of Adults Who Identify as Transgender by Age and State of Residence

STATE	AGE					
	18-24		25-64		65 AND OLDER	
	POPULATION	PERCENTAGE	POPULATION	PERCENTAGE	POPULATION	PERCENTAGE
United States of America	205,850	0.66%	967,100	0.58%	217,050	0.50%
Alabama	3,250	0.67%	15,450	0.61%	3,700	0.53%
Alaska	500	0.60%	1,950	0.48%	250	0.42%
Arizona	4,700	0.72%	20,800	0.63%	4,850	0.50%
Arkansas	1,850	0.65%	9,150	0.61%	2,300	0.52%
California	33,450	0.84%	154,750	0.77%	29,050	0.63%
Colorado	3,200	0.63%	14,900	0.53%	2,750	0.45%
Connecticut	1,750	0.52%	8,450	0.44%	2,100	0.40%
Delaware	700	0.73%	3,050	0.64%	800	0.55%
District of Columbia	2,600	3.14%	9,900	2.66%	1,950	2.72%
Florida	13,450	0.75%	66,750	0.67%	19,350	0.55%
Georgia	8,700	0.86%	39,500	0.75%	7,450	0.66%
Hawaii	1,200	0.89%	5,700	0.77%	1,550	0.72%
Idaho	750	0.47%	3,250	0.41%	750	0.35%
Illinois	7,150	0.57%	34,500	0.50%	7,750	0.46%
Indiana	4,100	0.62%	18,950	0.56%	4,450	0.50%
Iowa	1,100	0.35%	4,900	0.31%	1,350	0.29%
Kansas	1,500	0.49%	6,300	0.43%	1,500	0.38%
Kentucky	2,400	0.57%	12,200	0.52%	3,000	0.49%
Louisiana	3,150	0.66%	14,550	0.60%	3,100	0.52%
Maine	650	0.56%	3,650	0.50%	1,050	0.45%
Maryland	3,200	0.57%	15,650	0.49%	3,300	0.43%
Massachusetts	4,550	0.66%	20,150	0.56%	5,050	0.53%
Michigan	4,800	0.48%	22,400	0.43%	5,600	0.39%
Minnesota	3,450	0.69%	16,750	0.58%	3,950	0.54%
Mississippi	2,100	0.66%	9,400	0.62%	2,150	0.53%
Missouri	3,600	0.60%	17,000	0.54%	4,400	0.50%
Montana	400	0.40%	1,800	0.34%	450	0.30%

STATE	AGE					
	18-24		25-64		65 AND OLDER	
	POPULATION	PERCENTAGE	POPULATION	PERCENTAGE	POPULATION	PERCENTAGE
Nebraska	800	0.44%	3,650	0.39%	900	0.35%
Nevada	1,750	0.70%	9,100	0.61%	1,750	0.49%
New Hampshire	650	0.50%	3,100	0.43%	750	0.39%
New Jersey	3,950	0.51%	21,050	0.44%	5,050	0.41%
New Mexico	1,800	0.85%	8,000	0.75%	1,850	0.62%
New York	11,150	0.56%	54,150	0.51%	12,850	0.47%
North Carolina	6,600	0.68%	31,050	0.60%	7,150	0.53%
North Dakota	300	0.34%	1,050	0.30%	300	0.29%
Ohio	5,550	0.50%	27,150	0.45%	7,000	0.41%
Oklahoma	2,800	0.72%	12,600	0.64%	2,900	0.55%
Oregon	2,800	0.76%	13,700	0.65%	3,150	0.55%
Pennsylvania	6,100	0.48%	29,250	0.44%	8,250	0.40%
Rhode Island	650	0.56%	2,800	0.51%	750	0.46%
South Carolina	3,150	0.64%	14,250	0.58%	3,450	0.50%
South Dakota	350	0.39%	1,400	0.34%	350	0.30%
Tennessee	4,250	0.68%	21,550	0.63%	5,150	0.56%
Texas	19,600	0.73%	88,950	0.66%	15,700	0.55%
Utah	1,350	0.42%	4,950	0.36%	800	0.30%
Vermont	450	0.67%	2,000	0.59%	550	0.53%
Virginia	5,150	0.62%	24,000	0.54%	5,200	0.49%
Washington	4,850	0.73%	23,150	0.62%	4,700	0.52%
West Virginia	750	0.44%	4,150	0.42%	1,200	0.38%
Wisconsin	2,700	0.49%	13,150	0.43%	3,250	0.39%
Wyoming	200	0.37%	1,000	0.32%	200	0.29%

Discussion

Our current best estimate of the percentage of adults who identify as transgender in the United States is double that of the estimate produced by Gary J. Gates in 2011. Several reasons may account for this difference. A perceived increase in visibility and social acceptance of transgender people may increase the number of individuals willing to identify as transgender on a government-administered survey. The Gates estimate was based on data from only two states with very small samples. The current study analyzes population-based data from 19 states that identify transgender individuals. This provides larger samples and a wealth of information about transgender-identified adults not previously available. As a result, more sophisticated estimation procedures are now possible that produce more detailed and robust estimates than were possible in 2011. As new data collection efforts emerge at the state and national levels, estimates can continue to be refined to improve our understanding of the size and characteristics of the transgender population.

Appendix: Methodology and Credible Intervals of Population Estimates

Methodology

The Behavioral Risk Factor Surveillance System (BRFSS) collects state-specific data on health-related factors across the 50 states, the District of Columbia, and the territories of the United States. The survey is designed to be representative within each state. The survey is conducted by an interviewer via landline and cellular telephone. The national response rate for the 2014 BRFSS was 48.7% for landline telephones and 40.5% for cellular telephones (American Association of Public Opinion Research, Response Rate calculation 4).

The BRFSS contains optional module questionnaires in addition to its standard questionnaire for each state.[9] The 2014 BRFSS had 19 optional modules that states were able to opt-into. One of the modules contained the following question:

> Do you consider yourself to be transgender?
> Yes
> No
>
> [If Yes] Do you consider yourself to be male-to-female, female-to-male, or gender non-conforming?
>
> If the interviewer is asked for a definition of transgender, they respond:
> 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.

Since this question is included in an optional module, some states did not ask this question while others did. The 19 states that did ask this question include: Delaware, Hawaii, Idaho, Indiana, Iowa, Kansas, Kentucky, Louisiana, Maryland, Minnesota, Montana, Nevada, New York, Ohio, Pennsylvania, Vermont, Virginia, Wisconsin, and Wyoming. In total, 0.52% of BRFSS respondents in these states identified as transgender, and 151,456 respondents answered this question.

To estimate the population by state, we relied on multilevel regression and post-stratification.[10] The method fits multilevel logistic regression to the data to predict the likelihood that an individual identifies as transgender relying on demographic attributes about the respondents (e.g., race and ethnicity; age cohorts; and educational attainment). State and regional characteristics were accounted for and state-level characteristics were included to add information about how states differ from one another (e.g., racial composition, median income, percentage of households that are of same-sex couples, and percentage of the population that identifies as Evangelical). This method has been applied to measure statewide political attitudes[11] and to measure Jewish populations.[12] Further, the estimation strategy has undergone rigorous evaluation by other scholars, and these evaluations often show the method produces reliable and valid estimates.[13] While the estimation approach is not without its criticisms,[14] the method remains the best available approach to perform this estimation procedure. A recent research grant was awarded by the National Science Foundation to further refine and build upon the method.[15]

We extend the application of the estimation technique by incorporating all of the states in the BRFSS, even though respondents in only 19 states received the gender identity question. By doing so, we impute the states that did not ask the gender identity question by modeling the probability that a respondent identifies as transgender. The hierarchical model still incorporates the statewide covariates to increase precision in the estimation.[16] All models were estimated using a Hamiltonian Monte Carlo as implemented by the Stan probabilistic programming language.[17] The model was evaluated for appropriate diagnostics before results were presented. In the tables below, 95% credible intervals are provided for both the population estimates and the population estimates by age. A credible interval is a Bayesian equivalent of a confidence interval. A 95% credible interval represents the upper and lower bounds where there is a 0.95 probability an estimate falls between them.

Table A1. Estimated Population of Adults Who Identify as Transgender by State of Residence, 95% Credible Intervals

STATE	POPULATION		PERCENT	
	LOWER BOUND	UPPER BOUND	LOWER BOUND	UPPER BOUND
United States of America	854,066	2,293,511	0.36%	0.95%
Alabama	11,487	46,858	0.31%	1.27%
Alaska	1,634	4,323	0.30%	0.80%
Arizona	17,137	53,889	0.35%	1.09%
Arkansas	6,898	25,072	0.31%	1.12%
California	120,074	378,513	0.42%	1.31%
Colorado	12,094	35,295	0.31%	0.89%
Connecticut	7,454	19,824	0.27%	0.71%
Delaware	3,195	6,176	0.45%	0.87%
District of Columbia	2,608	66,391	0.50%	12.63%
Florida	58,364	163,960	0.38%	1.07%
Georgia	31,243	97,981	0.42%	1.32%
Hawaii	6,310	11,215	0.58%	1.03%
Idaho	3,403	6,800	0.29%	0.58%
Illinois	30,519	77,228	0.31%	0.79%
Indiana	21,867	35,060	0.44%	0.71%
Iowa	4,558	10,398	0.19%	0.44%
Kansas	7,183	11,706	0.33%	0.54%
Kentucky	13,092	23,060	0.39%	0.69%
Louisiana	15,582	27,230	0.45%	0.78%
Maine	3,202	8,895	0.30%	0.84%
Maryland	17,177	28,088	0.38%	0.62%
Massachusetts	17,251	49,307	0.33%	0.94%
Michigan	19,132	52,059	0.25%	0.68%
Minnesota	19,368	30,211	0.47%	0.74%
Mississippi	6,731	27,122	0.30%	1.21%
Missouri	13,512	43,611	0.29%	0.94%
Montana	1,880	3,669	0.24%	0.47%
Nebraska	3,247	8,207	0.23%	0.59%
Nevada	8,570	18,018	0.41%	0.86%
New Hampshire	2,693	7,362	0.26%	0.70%
New Jersey	17,981	49,987	0.26%	0.73%
New Mexico	6,613	19,959	0.42%	1.27%
New York	57,043	103,813	0.37%	0.68%

STATE	POPULATION		PERCENT	
	LOWER BOUND	UPPER BOUND	LOWER BOUND	UPPER BOUND
North Carolina	26,299	76,786	0.35%	1.03%
North Dakota	961	2,785	0.18%	0.51%
Ohio	30,705	50,183	0.35%	0.56%
Oklahoma	9,049	37,798	0.31%	1.31%
Oregon	10,774	36,440	0.35%	1.20%
Pennsylvania	33,506	56,799	0.33%	0.57%
Rhode Island	2,493	6,979	0.30%	0.84%
South Carolina	12,139	38,343	0.33%	1.05%
South Dakota	1,279	3,592	0.20%	0.57%
Tennessee	16,601	60,319	0.33%	1.22%
Texas	71,791	212,200	0.38%	1.11%
Utah	3,338	16,157	0.17%	0.82%
Vermont	2,126	4,034	0.42%	0.80%
Virginia	26,945	44,697	0.43%	0.71%
Washington	18,574	57,196	0.35%	1.08%
West Virginia	3,518	10,477	0.24%	0.71%
Wisconsin	13,920	25,364	0.32%	0.58%
Wyoming	945	2,073	0.22%	0.47%

Table A2. Estimated Population of Adults Who Identify as Transgender by Age and State of Residence, 95% Credible Intervals

STATE	AGE					
	18-24		25-64		65 AND OLDER	
	POPULATION [LB, UB]	PERCENTAGE [LB, UB]	POPULATION [LB, UB]	PERCENTAGE [LB, UB]	POPULATION [LB, UB]	PERCENTAGE [LB, UB]
United States of America	[121,074, 354,454]	[0.39%, 1.13%]	[569,753, 1,649,712]	[0.34%, 1.00%]	[132,175, 360,271]	[0.31%, 0.84%]
Alabama	[1,624, 7,089]	[0.33%, 1.46%]	[7,630, 32,564]	[0.30%, 1.29%]	[1,868, 7,887]	[0.27%, 1.13%]
Alaska	[282, 806]	[0.35%, 0.99%]	[1,132, 3,210]	[0.28%, 0.81%]	[157, 434]	[0.25%, 0.69%]
Arizona	[2,562, 8,556]	[0.39%, 1.31%]	[11,120, 37,886]	[0.34%, 1.14%]	[2,708, 8,560]	[0.28%, 0.88%]
Arkansas	[966, 3,550]	[0.34%, 1.23%]	[4,614, 17,456]	[0.31%, 1.16%]	[1,185, 4,384]	[0.27%, 0.99%]
California	[18,464, 60,029]	[0.46%, 1.50%]	[83,407, 274,478]	[0.41%, 1.36%]	[15,871, 51,075]	[0.35%, 1.11%]
Colorado	[1,796, 5,616]	[0.35%, 1.10%]	[8,404, 25,994]	[0.30%, 0.92%]	[1,595, 4,612]	[0.26%, 0.76%]
Connecticut	[1,024, 2,942]	[0.30%, 0.86%]	[4,988, 14,281]	[0.26%, 0.74%]	[1,253, 3,458]	[0.24%, 0.65%]
Delaware	[451, 974]	[0.49%, 1.05%]	[2,061, 4,417]	[0.43%, 0.92%]	[541, 1,074]	[0.38%, 0.76%]
District of Columbia	[470, 11,880]	[0.57%, 14.48%]	[1,786, 47,078]	[0.48%, 12.65%]	[361, 9,351]	[0.51%, 13.10%]
Florida	[7,554, 23,144]	[0.42%, 1.29%]	[37,404, 114,026]	[0.37%, 1.14%]	[11,453, 32,341]	[0.33%, 0.92%]
Georgia	[4,847, 16,177]	[0.48%, 1.59%]	[21,496, 71,304]	[0.41%, 1.35%]	[4,147, 13,309]	[0.37%, 1.17%]
Hawaii	[845, 1,662]	[0.62%, 1.23%]	[4,005, 7,975]	[0.54%, 1.08%]	[1,088, 2,098]	[0.51%, 0.99%]
Idaho	[500, 1,087]	[0.32%, 0.69%]	[2,224, 4,882]	[0.28%, 0.61%]	[525, 1,068]	[0.25%, 0.50%]
Illinois	[4,255, 11,778]	[0.34%, 0.94%]	[20,559, 55,749]	[0.30%, 0.81%]	[4,668, 12,533]	[0.28%, 0.74%]
Indiana	[3,045, 5,579]	[0.46%, 0.84%]	[14,012, 25,792]	[0.41%, 0.76%]	[3,457, 5,802]	[0.39%, 0.65%]
Iowa	[656, 1,617]	[0.21%, 0.52%]	[2,963, 7,376]	[0.19%, 0.47%]	[841, 1,939]	[0.18%, 0.41%]
Kansas	[1,065, 1,978]	[0.36%, 0.66%]	[4,565, 8,465]	[0.31%, 0.58%]	[1,130, 1,919]	[0.29%, 0.49%]
Kentucky	[1,665, 3,374]	[0.39%, 0.80%]	[8,649, 16,904]	[0.37%, 0.73%]	[2,190, 3,949]	[0.36%, 0.64%]
Louisiana	[2,204, 4,371]	[0.46%, 0.92%]	[10,310, 20,236]	[0.43%, 0.84%]	[2,260, 4,181]	[0.38%, 0.71%]
Maine	[378, 1,146]	[0.32%, 0.98%]	[2,120, 6,268]	[0.29%, 0.87%]	[607, 1,739]	[0.27%, 0.77%]
Maryland	[2,303, 4,398]	[0.41%, 0.78%]	[11,347, 21,316]	[0.35%, 0.66%]	[2,461, 4,307]	[0.32%, 0.57%]
Massachusetts	[2,568, 7,807]	[0.37%, 1.13%]	[11,326, 34,087]	[0.31%, 0.95%]	[2,832, 8,391]	[0.30%, 0.88%]
Michigan	[2,655, 7,870]	[0.27%, 0.79%]	[12,593, 37,168]	[0.24%, 0.72%]	[3,240, 8,999]	[0.23%, 0.63%]
Minnesota	[2,541, 4,552]	[0.51%, 0.91%]	[12,539, 22,498]	[0.44%, 0.78%]	[3,043, 5,080]	[0.42%, 0.70%]

STATE	AGE					
	18-24		25-64		65 AND OLDER	
	POPULATION [LB, UB]	PERCENTAGE [LB, UB]	POPULATION [LB, UB]	PERCENTAGE [LB, UB]	POPULATION [LB, UB]	PERCENTAGE [LB, UB]
Mississippi	[1,009, 4,310]	[0.32%, 1.37%]	[4,490, 19,158]	[0.29%, 1.26%]	[1,036, 4,327]	[0.26%, 1.08%]
Missouri	[1,876, 6,423]	[0.32%, 1.08%]	[8,975, 30,421]	[0.29%, 0.97%]	[2,324, 7,535]	[0.26%, 0.85%]
Montana	[266, 572]	[0.27%, 0.58%]	[1,222, 2,592]	[0.23%, 0.49%]	[323, 650]	[0.21%, 0.41%]
Nebraska	[473, 1,264]	[0.25%, 0.68%]	[2,143, 5,820]	[0.23%, 0.61%]	[551, 1,389]	[0.21%, 0.54%]
Nevada	[1,135, 2,646]	[0.45%, 1.04%]	[5,889, 13,545]	[0.40%, 0.92%]	[1,150, 2,547]	[0.32%, 0.71%]
New Hampshire	[356, 1,067]	[0.28%, 0.85%]	[1,798, 5,237]	[0.25%, 0.72%]	[450, 1,244]	[0.23%, 0.64%]
New Jersey	[2,265, 6,732]	[0.29%, 0.86%]	[12,204, 36,508]	[0.25%, 0.76%]	[3,013, 8,517]	[0.24%, 0.68%]
New Mexico	[988, 3,255]	[0.46%, 1.53%]	[4,389, 14,044]	[0.41%, 1.32%]	[1,011, 3,160]	[0.34%, 1.07%]
New York	[7,732, 15,788]	[0.39%, 0.79%]	[37,363, 76,111]	[0.35%, 0.72%]	[9,137, 17,614]	[0.33%, 0.64%]
North Carolina	[3,765, 11,609]	[0.39%, 1.19%]	[17,757, 54,557]	[0.34%, 1.06%]	[4,194, 12,219]	[0.31%, 0.91%]
North Dakota	[170, 531]	[0.19%, 0.59%]	[593, 1,834]	[0.17%, 0.51%]	[170, 498]	[0.17%, 0.50%]
Ohio	[4,001, 7,561]	[0.36%, 0.68%]	[19,701, 36,836]	[0.32%, 0.61%]	[5,251, 9,125]	[0.31%, 0.54%]
Oklahoma	[1,351, 6,063]	[0.35%, 1.56%]	[6,026, 26,649]	[0.31%, 1.36%]	[1,438, 6,011]	[0.27%, 1.13%]
Oregon	[1,512, 5,190]	[0.41%, 1.42%]	[7,380, 25,644]	[0.35%, 1.22%]	[1,714, 5,934]	[0.30%, 1.02%]
Pennsylvania	[4,284, 8,404]	[0.34%, 0.67%]	[21,090, 40,686]	[0.31%, 0.60%]	[6,172, 10,959]	[0.30%, 0.54%]
Rhode Island	[389, 1,143]	[0.32%, 0.95%]	[1,608, 4,817]	[0.29%, 0.87%]	[424, 1,219]	[0.27%, 0.77%]
South Carolina	[1,784, 5,944]	[0.36%, 1.21%]	[7,977, 26,549]	[0.32%, 1.08%]	[1,963, 6,533]	[0.28%, 0.94%]
South Dakota	[188, 577]	[0.22%, 0.69%]	[827, 2,452]	[0.20%, 0.58%]	[217, 631]	[0.18%, 0.52%]
Tennessee	[2,220, 8,664]	[0.36%, 1.39%]	[11,036, 42,384]	[0.32%, 1.24%]	[2,740, 9,962]	[0.30%, 1.09%]
Texas	[10,763, 33,983]	[0.40%, 1.27%]	[49,965, 156,972]	[0.37%, 1.16%]	[8,906, 27,059]	[0.31%, 0.95%]
Utah	[617, 3,133]	[0.19%, 0.96%]	[2,244, 11,329]	[0.16%, 0.83%]	[385, 1,804]	[0.14%, 0.67%]
Vermont	[299, 629]	[0.46%, 0.96%]	[1,364, 2,844]	[0.40%, 0.84%]	[372, 745]	[0.38%, 0.75%]
Virginia	[3,798, 6,980]	[0.46%, 0.85%]	[17,590, 33,074]	[0.40%, 0.75%]	[3,987, 7,026]	[0.38%, 0.66%]
Washington	[2,662, 8,550]	[0.40%, 1.29%]	[12,748, 41,018]	[0.34%, 1.10%]	[2,655, 8,291]	[0.29%, 0.91%]
West Virginia	[427, 1,325]	[0.25%, 0.76%]	[2,347, 7,299]	[0.24%, 0.74%]	[687, 2,040]	[0.22%, 0.66%]
Wisconsin	[1,883, 3,799]	[0.34%, 0.69%]	[9,141, 18,414]	[0.30%, 0.61%]	[2,287, 4,434]	[0.28%, 0.54%]
Wyoming	[135, 328]	[0.23%, 0.57%]	[634, 1,509]	[0.21%, 0.49%]	[141, 308]	[0.19%, 0.41%]

*Note: LB=95% Lower bound; UB=95% Upper bound

ENDNOTES

[1] For a discussion of gender identity data collection in federal population-based surveys and recommended measures, see The GenIUSS Group. (2014). *Best Practices for Asking Questions to Identify Transgender and Other Gender Minority Respondents on Population-Based Surveys*. J.L. Herman (Ed.). Los Angeles, CA: The Williams Institute, available at http://williamsinstitute.law.ucla.edu/wp-content/uploads/geniuss-report-sep-2014.pdf.

[2] Gates, G.J. (2011). *How many people are lesbian, gay, bisexual, and transgender?* Los Angeles, CA: The Williams Institute, available at http://williamsinstitute.law.ucla.edu/wp-content/uploads/Gates-How-Many-People-LGBT-Apr-2011.pdf. A more recent report that was released in March 2016 provided estimates of the transgender population ages 13 and above in 15 states ("Estimates of Transgender Populations in States with Legislation Impacting Transgender People, available at http://williamsinstitute.law.ucla.edu/research/census-lgbt-demographics-studies/estimates-of-transgender-populations-in-states-with-legislation-impacting-transgender-people/). These estimates were based on Gates' 2011 study and other estimates of the transgender youth population. We believe the current study provides more robust estimates of the percentage of transgender-identified adults in those 15 states.

[3] A detailed description of the methodology for this study is included in the Appendix and further details will be included in a separate document published alongside this report.

[4] For national and state estimates provided in this report, adult general population figures from the U.S. Census Bureau's American Community Survey, 2011-2013 3-year PUMS, were multiplied by the estimated percentage of transgender-identified adults to yield the estimated number of transgender-identified adults.

[5] The District of Columbia is not included in this range for states. DC had a notably high percentage of transgender-identified adults (2.8%) and is considered an outlier due to its unique geographic (urban) and demographic profile.

[6] See note #5.

[7] See note #5.

[8] See, for instance, Conron, K.J., Scott, G., Stowell, G.S., and Landers, S. J. (2012). Transgender Health in Massachusetts: Results from a Household Probability Sample of Adults. *American Journal of Public Health, 102*(1), 118-122.

[9] For more detailed information on gender identity data collection in the BRFSS, see Baker, K.E. & Hughes, M. (2016). *Sexual Orientation and Gender Identity Data Collection in the Behavioral Risk Factor Surveillance System*. Washington, DC: The Center for American Progress, available at https://cdn.americanprogress.org/wp-content/uploads/2016/03/29090401/BRFSSdatacollect-brief-03.31.16.pdf.

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[13] Lax, J.R., & Phillips, J.H. (2009). How should we estimate public opinion in the states? *American Journal of Political Science, 53*(1), 107-121; Warshaw, C., & Rodden, J. (2012). How should we measure district-level public opinion on individual issues? *Journal of Politics, 74*(1), 203-219.

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[15] NSF-1424962. (2014-2017). Using multilevel regress and post-stratification to measure and study dynamic public opinion.

[16] See Flores, A.R. (2016). *Estimating the adult population that identifies as transgender in the BRFSS*. Los Angeles, CA: The Williams Institute, UCLA.

[17] Stan Development Team. (2016) RStan: The R interface to Stan, version 2.9.0. http://mc-stan.org.

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