

MEMO

TO: Department of Veterans Affairs

FROM: Sean Cahill, PhD, Director of Health Policy Research, The Fenway Institute

DATE: May 24, 2022

RE: **RIN:** 2900-AR34, Gender Confirmation Surgery

Thank you for meeting with us regarding the above mentioned proposed regulation to allow gender confirmation surgery for veterans with gender dysphoria. We commend the Department of Veterans Affairs for the important LGBTQI+ health equity work that has been led by Jillian Shipherd and Michael Kauth for many years. In this memo we summarize some publications we found that indicate positive patient outcomes following gender affirming care. We also include some information we found that may be helpful in estimating the potential cost of expanding insurance coverage to include gender affirming care. Please let us know if you have follow up questions (scahill@fenwayhealth.org).

Indicators of Positive Outcomes

A 2020 systematic review identified 20 studies that measured the relationship among hormone therapy among transgender people and depression, anxiety, and/or quality of life. Of seven studies examining quality of life, one RCT found that, after 1 year of testosterone treatment, life satisfaction among three groups (n=15 each) of transgender men increased by 5.5 points on a 10-point scale. A before-after trial found that life satisfaction among transgender men (n=50) nearly doubled over 5 years. Several studies found no improvement, but no study found a decline in quality of life after initiating hormone therapy. Of 12 studies assessing depression, several found large decreases in depression, while others found minor decreases or no significant change after initiation of hormone therapy. None found an increase in depression. Eight studies assessed anxiety. Two found decreases in anxiety post initiation of hormone therapy, six found no significant change, and none found an increase in anxiety. The authors concluded that hormone therapy

may improve depression, anxiety, and quality of life, but that more research is needed.¹

In a study of transgender individuals 18 months after beginning gender affirming hormone therapy (GAHT), researchers found a significant reduction in symptoms of depression (mean change difference, -2.05 ; 95% CI, -2.72 to -1.38 ; $P = .00$).²

Another study found that initiating masculinizing GAHT improved general health within 6 months of treatment. In participants undergoing masculinizing GAHT, mean scores (out of 100, using the RAND Short Form-36 Health Survey) from before treatment compared to mean scores after 6 months of treatment improved in the following categories:

- Physical functioning: 62.6 to 65.8
- Role limitations due to emotional problems: 44.9 to 48.1
- Energy/Fatigue: 61.7 to 66.5
- Emotional well-being: 77.6 to 80.8
- Social Functioning: 84.4 to 88.7
- General Health: 64.6 to 72.2³

Another study found that gender affirming care reduces feelings of gender dysphoria (GD). Participants were assessed using the Utrecht Gender Dysphoria Scale, with score ranges from 12 (minimal dysphoria) to 60 (maximal dysphoria). Participants who received both hormone therapy and surgery reported significantly less feelings of GD (15.5) when compared with people without medical interventions (20.2).⁴

Still another study found that patients who underwent a gender-affirming mastectomy reported significant improvements in depression and anxiety

¹ Baker KE, Wilson LM, Sharma R, Dukhanin V, McArthur K, Robinson KA. Hormone Therapy, Mental Health, and Quality of Life Among Transgender People: A Systematic Review. *J Endocr Soc.* 2021;5(4):bvab011. Published 2021 Feb 2. doi:10.1210/jendso/bvab011.

² Zoë Aldridge et al., "Long-term Effect of Gender-affirming Hormone Treatment on Depression and Anxiety Symptoms in Transgender People: A Prospective Cohort Study," *Andrology* 9, no. 6 (November 2021): 1808–16, <https://doi.org/10.1111/andr.12884>.

³ Lucas Foster Skewis et al., "Short-Term Effects of Gender-Affirming Hormone Therapy on Dysphoria and Quality of Life in Transgender Individuals: A Prospective Controlled Study," *Frontiers in Endocrinology* 12 (July 29, 2021): 717766, <https://doi.org/10.3389/fendo.2021.717766>.

⁴ Tim C. van de Grift et al., "Effects of Medical Interventions on Gender Dysphoria and Body Image: A Follow-Up Study," *Psychosomatic Medicine* 79, no. 7 (September 2017): 815–23, <https://doi.org/10.1097/PSY.0000000000000465>.

following this procedure.⁵ Depression was measured using The Patient Health Questionnaire-9 (PHQ-9),⁶ with a mean preoperative score of 7.8 and a mean postoperative score of 5.4. Anxiety was measured using the General Anxiety Disorder-7 (GAD-7) scale,⁷ with a mean preoperative score of 7.6 (demonstrating mild anxiety) and a mean postoperative score of 4.6 (indicating a negative screen for anxiety).

A study of 247 transgender women found that those who had had gender affirmation surgery and/or facial feminization surgery had mental health quality of life scores that did not differ significantly from those of the general female population. Those transgender women who had not had surgical interventions had statistically significant lower mental health scores compared to the mental health scores for “the general female population.”⁸

The first large-scale, controlled study that demonstrated an association between gender affirming surgery and improved mental health outcomes also shows that undergoing gender-affirming surgery is associated with decreased odds of past-month severe psychological distress, past-year smoking, and past-year suicidal ideation.⁹

⁵ Megan Lane et al., “Gender Affirming Mastectomy Improves Quality of Life in Transmasculine Patients: A Single-Center Prospective Study,” *Annals of Surgery* Publish Ahead of Print (August 13, 2021), <https://doi.org/10.1097/SLA.0000000000005158>.

⁶ “PHQ-9 (Patient Health Questionnaire-9),” MDCalc, accessed January 26, 2022, <https://www.mdcalc.com/phq-9-patient-health-questionnaire-9>.

⁷ “GAD-7 (General Anxiety Disorder-7) - MDCalc,” accessed January 26, 2022, <https://www.mdcalc.com/gad-7-general-anxiety-disorder-7>.

⁸ Tiffany A. Ainsworth and Jeffrey H. Spiegel, “Quality of Life of Individuals with and without Facial Feminization Surgery or Gender Reassignment Surgery,” *Quality of Life Research* 19, no. 7 (September 2010): 1019–24, <https://doi.org/10.1007/s11136-010-9668-7>.

⁹ Anthony N. Almazan and Alex S. Keuroghlian, “Association Between Gender-Affirming Surgeries and Mental Health Outcomes,” *JAMA Surgery* 156, no. 7 (July 1, 2021): 611, <https://doi.org/10.1001/jamasurg.2021.0952>.

Figure 2. Comparison of Mental Health Outcomes Among Respondents Who Did and Did Not Undergo Gender-Affirming Surgery

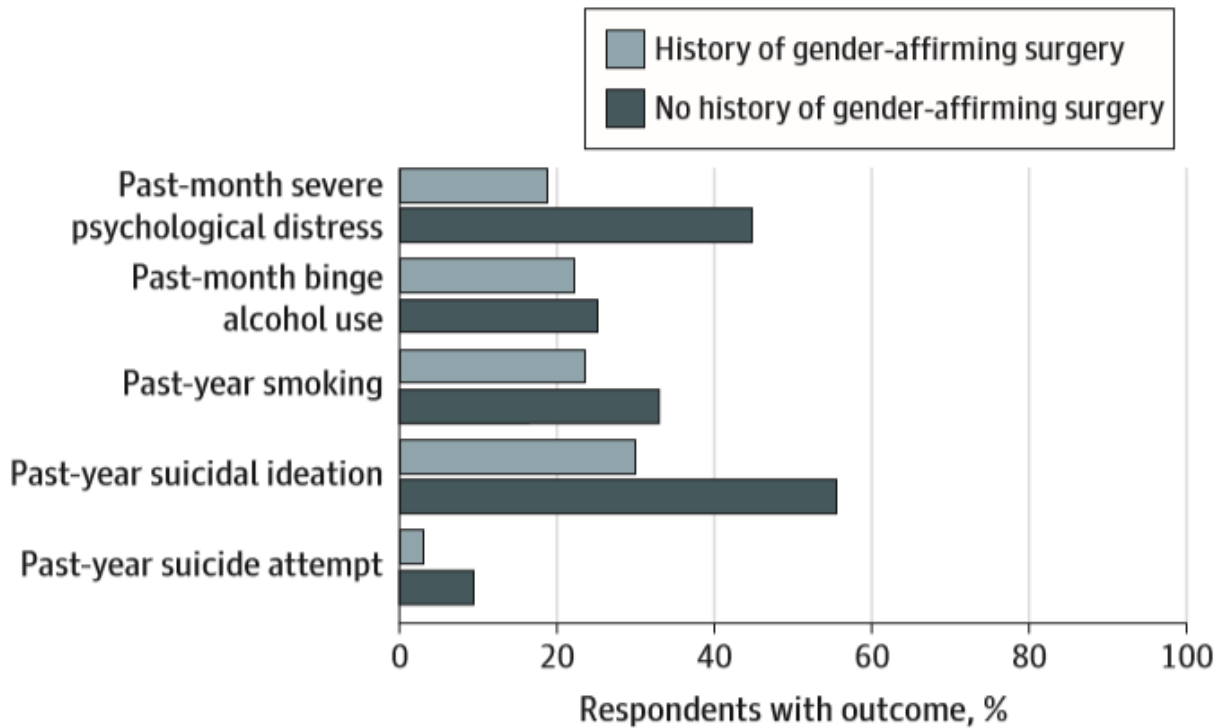


Table 2. Association Between History of Gender-Affirming Surgery and Mental Health Outcomes^a

Variable	aOR (95% CI) ^b	P value
Severe psychological distress (past month) ^c	0.58 (0.50-0.67)	<.001
Substance use		
Binge alcohol use (past month) ^d	0.83 (0.72-0.96)	.01
Smoking (past year)	0.65 (0.57-0.75)	<.001
Suicidality (past year)		
Ideation	0.56 (0.50-0.64)	<.001
Attempt	0.65 (0.47-0.90)	.009

Abbreviation: aOR, adjusted odds ratio.

^a Adjusted for age, education, employment status, family rejection, gender identity, health insurance, household income, race/ethnicity, sex assigned at birth, sexual orientation, history of gender-affirming counseling, pubertal suppression, and history of gender-affirming hormone therapy.

^b Reference/control group (n = 16 401) is composed of individuals who desired at least 1 type of gender-affirming surgery but had not received any surgeries. Exposure group (n = 3559) is limited to respondents who had their first surgery at least 2 years prior to submitting survey responses.

^c Defined as a score of at least 13 on the Kessler Psychological Distress Scale.

^d Defined as consuming at least 5 alcoholic drinks on the same occasion.

The American Heart Association cautions that “as many as 30% of all coronary heart disease (CHD) deaths in the United States each year are attributable to cigarette smoking.”¹⁰ The CDC states that “smoking is a major cause of cardiovascular disease (CVD) and causes approximately one of every four deaths from CVD, according to the 2014 Surgeon General’s Report on smoking and health. CVD is the single largest cause of death in the United States, killing more than 800,000 people a year.”¹¹ “Cigarettes cause about 1.5 million deaths from

¹⁰ Ira S. Ockene and Nancy Houston Miller, “Cigarette Smoking, Cardiovascular Disease, and Stroke: A Statement for Healthcare Professionals From the American Heart Association,” *Circulation* 96, no. 9 (November 4, 1997): 3243–47, <https://doi.org/10.1161/01.CIR.96.9.3243>.

¹¹ “Smoking and Cardiovascular Disease,” n.d., 2.

lung cancer per year.”¹² Receiving gender affirming care is associated with decreased odds of smoking, which can reduce development of serious comorbidities and life-long health problems.

Another large-scale controlled study demonstrates associations between gender affirming hair removal (GAHR) and improved mental health outcomes, including decreased psychological distress, past-year smoking, and past-year suicidal ideation.¹³ Additionally, in two studies of substance use in transgender adults, researchers found demonstrated associations between gender-affirming medical care and lower odds of high-risk substance use and HIV.^{14 15}

Cost: General

Following the Massachusetts Division of Insurance’s 2014 requirement that private insurers cover gender affirming care for transgender patients, researchers conducted a cost effectiveness analysis using a Markov model with 5- and 10-year time horizons from a U.S. societal perspective discounted at 3%. The authors used data “from over 30 randomized control trials, observational data, and case series detailing types of gender-affirming care.” They also used data from the 2011 National Transgender Discrimination Survey. The Massachusetts Group Insurance Commission requested research on the implications of the 2014 DOI change. Also in 2014 Massachusetts Governor Deval Patrick announced that the Commonwealth’s Medicaid department would cover gender affirming care. Also that year the Centers for Medicare and Medicaid Services removed its 33-year ban on coverage of gender-affirming care for CMS beneficiaries.

“Budget impact was calculated on a per-member-per-month basis for an approximate 2014 U.S. population of 320 million (U.S. Census Bureau, 2014). The calculation assumed that following implementation of blanket provider coverage, there would be an influx of about 30,000 transgender persons seeking transitional

¹² Robert N Proctor, “The History of the Discovery of the Cigarette–Lung Cancer Link: Evidentiary Traditions, Corporate Denial, Global Toll: Table 1,” *Tobacco Control* 21, no. 2 (March 2012): 87–91, <https://doi.org/10.1136/tobaccocontrol-2011-050338>.

¹³ Michelle S. Lee et al., “Association Between Gender-Affirming Hair Removal and Mental Health Outcomes,” *JAMA Dermatology* 157, no. 9 (September 1, 2021): 1120, <https://doi.org/10.1001/jamadermatol.2021.2551>.

¹⁴ Alex S. Keuroghlian et al., “Substance Use and Treatment of Substance Use Disorders in a Community Sample of Transgender Adults,” *Drug and Alcohol Dependence* 152 (July 2015): 139–46, <https://doi.org/10.1016/j.drugalcdep.2015.04.008>.

¹⁵ Erin C. Wilson et al., “Connecting the Dots: Examining Transgender Women’s Utilization of Transition-Related Medical Care and Associations with Mental Health, Substance Use, and HIV,” *Journal of Urban Health* 92, no. 1 (February 2015): 182–92, <https://doi.org/10.1007/s11524-014-9921-4>.

care in the first 5 years...The additional cost would be the difference in cost of benefit coverage from the model.”

The authors concluded:

The budget impact of this coverage is approximately \$0.016 per member per month. Although the cost for transitions is \$10,000–22,000 and the cost of provider coverage is \$2175/year, these additional expenses hold good value for reducing the risk of negative endpoints—HIV, depression, suicidality, and drug abuse. Results were robust to uncertainty. The probabilistic sensitivity analysis showed that provider coverage was cost-effective in 85 % of simulations. Health insurance coverage for the U.S. transgender population is affordable and cost-effective, and has a low budget impact on U.S. society. Organizations such as the GIC should consider these results when examining policies regarding coverage exclusions.¹⁶

According to a 2016 RAND Corporation study of the impact of transgender service in the U.S. military, the likely increased costs of gender affirming and transition-related health care for the Department of Defense are relatively low: a 0.04- to 0.13-percent increase in active-component health care expenditures yearly.¹⁷ After reviewing existing national data and using two distinct approaches, prevalence based and utilization based, the authors estimated the potential number of transgender service members likely to seek affirming treatment. They also cited the dangers of denying appropriate transition-related care, including alternative solutions such as injecting construction-grade silicone, resulting in infection, inflammation, serious injury, and disfigurement.

Cost: State Specific Examples

In a Wisconsin court case challenging the exclusion of gender affirming care under the state employee health insurance program, the court noted that “[f]rom an actuarial perspective, there appears to be no dispute that the cost of coverage is immaterial at 0.1% to 0.2% of the total cost of providing health insurance to state employees, even adopting defendants’ cost estimation.”¹⁸ Plaintiffs in the *Boyden v. Conlin* case referred to the World Professional Association for Transgender

¹⁶ Padula WV, Heru S, Campbell JD. Societal Implications of Health Insurance Coverage for Medically Necessary Services in the U.S. Transgender Population: A Cost-Effectiveness Analysis. *J Gen Intern Med*. 2016;31(4):394-401. doi:10.1007/s11606-015-3529-6.

¹⁷ Agnes Schaefer et al., *Assessing the Implications of Allowing Transgender Personnel to Serve Openly* (RAND Corporation, 2016), <https://doi.org/10.7249/RR1530>.

¹⁸ *Boyden v. Conlin*, No. 341 F. Supp. 3d 979 (UNITED STATES DISTRICT COURT FOR THE WESTERN DISTRICT OF WISCONSIN September 18, 2018).

Health (WPATH) Standards of Care and cited 37 years of data on the beneficial outcomes of affirming care.

On October 2021, Colorado's Division of Insurance was the first state to update their Essential Health Benefits benchmark plan to include gender affirming care coverage. During this benchmark process, Colorado's Division of Insurance had determined that their premium impact assessment of adding coverage for gender-affirming surgeries as an EHB was 0.04% of total allowed claims.¹⁹

Based on approximately \$3.2 billion in premiums, the cost for North Carolina State Health Plan (NCSHP) to cover gender affirming care for transgender patients is estimated to be 0.011% to 0.027% of total annual premiums.²⁰

¹⁹ Matt Sauter, Julie Peper, and Michael Cohen, "State of Colorado: Division of Insurance: Benchmark Plan Benefit Valuation Report" (Wakely Consulting Group, LLC, May 7, 2021).

²⁰ Kirsten Schatten and Kenneth Vieira, "Memorandum: Transgender Cost Estimate" (Segal Consulting, November 29, 2016), <https://www.shpnc.org/media/22/download>.