CARDIOVASCULAR DISEASE IN TRANSGENDER ADULTS:
Exploring Sex, Gender Identity and Risk

Sean J. Iwamoto, MD
Assistant Professor of Medicine
Division of Endocrinology, Metabolism & Diabetes
University of Colorado School of Medicine
Rocky Mountain Regional VA Medical Center

Advanced Fellow in Geriatrics
Geriatric Research, Education and Clinical Center
VA Eastern Colorado Health Care System

Co-Founder
UCHealth Integrated Transgender Program

18th Annual Women’s Health Symposium
February 29, 2020
DISCLOSURES

• Research Funding:
  • University of Colorado Center for Women’s Health Research
  • NIH/Colorado Nutrition Obesity Research Center
  • University of Colorado Clinical and Translational Research Center
  • World Professional Association for Transgender Health
  • VA Geriatric Research, Education and Clinical Center

• Medications discussed are being used off-label

• Abbreviations
  • CVD = Cardiovascular disease
  • Trans = Transgender
  • GAHT = Gender-affirming hormone therapy
LEARNING OBJECTIVES

• Improve confidence in using trans-related terminology
• Summarize how estradiol and testosterone impact CVD risk in trans adults
• Assess CVD risk in trans adults
Identity ≠ Expression ≠ Sex
Gender ≠ Sexual Orientation

Sex Assigned At Birth
- Female
- Intersex
- Male

Sexually Attracted to...
- Women a/o Feminine a/o Female People
- Men a/o Masculine a/o Male People

Romantically Attracted to...
- Women a/o Feminine a/o Female People
- Men a/o Masculine a/o Male People
<table>
<thead>
<tr>
<th>Term</th>
<th>Definition</th>
<th>Notes</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Cisgender (Cis)</strong></td>
<td>Gender identity/expression align with the sex assigned at birth</td>
<td><strong>DO NOT</strong> say “regular” or “real”</td>
</tr>
<tr>
<td><strong>Transgender (Trans)</strong></td>
<td>Gender identity/expression differ from the sex assigned at birth</td>
<td><strong>DOES NOT</strong> require GAHT or surgery</td>
</tr>
<tr>
<td></td>
<td></td>
<td><strong>DO NOT</strong> use “transgendered” or “transgenders”</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Inclusive of gender non-binary</td>
</tr>
<tr>
<td><strong>Gender non-binary</strong></td>
<td>Outside the male/female binary, both or alternating male/female, neither</td>
<td>May include gender-fluid, gender queer, pangender, polygender, agender</td>
</tr>
<tr>
<td></td>
<td>male/female</td>
<td></td>
</tr>
</tbody>
</table>
Having a “transgender inclusive” provider led to significantly lower % of:

- Not having routine checkup in past year
- Delayed care (fear of discrimination)
- Currently depression
- Suicide ideation
- Suicide attempts
- Feeling general health is fair/poor
- # days physical health not good in past month
- # days mental health not good in past month

Christian R et al. J Gen Intern Med. 2018
GOALS OF GAHT

Binary approach

• Trans women (assigned male at birth, female gender identity)
  • Use estrogen (oral, parenteral, transdermal) plus anti-androgen
  • Achieve female secondary sex characteristics
  • Achieve female physiologic range serum estradiol and testosterone

• Trans men (assigned female at birth, male gender identity)
  • Use testosterone (parenteral, transdermal)
  • Achieve male secondary sex characteristics
  • Achieve male physiologic range serum estradiol and testosterone

Non-binary approach

• What are the goals?
PREVALENCE OF CVD

NHANES 2013-2016

Benjamin EJ et al. Circulation. 2019
CAUSES OF DEATH

U.S. 2016

Benjamin EJ et al. Circulation. 2019
SEX STEROIDS AND THE CARDIOVASCULAR SYSTEM

Adapted: Connelly PJ et al. Hypertension. 2019
SEX STEROIDS AND THE CARDIOVASCULAR SYSTEM

Adapted: Connelly PJ et al. Hypertension. 2019

Testosterone

Endothelial, vascular smooth muscle & myocardial cells

Androgen Receptor Activation

Endothelium-dependent & independent vasodilation

Ischaemic cardioprotection via upregulation of cardiac α1-adrenoceptor

Thromboxane A₂ mediated vasoconstriction

Vascular smooth muscle cell apoptosis

Vascular leucocyte migration, inflammation and oxidative stress
CLINICAL STUDY

A long-term follow-up study of mortality in transsexuals receiving treatment with cross-sex hormones

Henk Asscheman¹, Erik J Giltay², Jos A J Megens², W (Pim) de Ronde¹, Michael A A van Trotsenburg² and Louis J G Gooren¹

• 966 trans women: mean age 31±11 years, 86% gonadectomy
• 365 trans men: mean age 26±8 years, 94% gonadectomy
• Smoking: ~40% current; ~40% former/unknown
• BMI and rates of HTN, HLD, DM2 – Not reported
• Mean follow up 18.5 years
• Standardized mortality rates (SMR): observed cases vs. expected # of deaths in the general population based on sex assigned at birth

<table>
<thead>
<tr>
<th>Cause of death</th>
<th>Observed cases</th>
<th>SMR (95% CI)</th>
<th>Observed cases</th>
<th>SMR (95% CI)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Malignant neoplasm</td>
<td>28</td>
<td>0.98 (0.88–1.08)</td>
<td>5</td>
<td>0.99 (0.65–1.44)</td>
</tr>
<tr>
<td>Lung</td>
<td>13</td>
<td>1.35 (1.14–1.58)</td>
<td>1</td>
<td>1.06 (0.26–3.19)</td>
</tr>
<tr>
<td>Digestive tract</td>
<td>3</td>
<td>0.42 (0.28–0.60)</td>
<td>2</td>
<td>2.41 (0.90–5.18)</td>
</tr>
<tr>
<td>Hematological</td>
<td>6</td>
<td>2.58 (1.97–3.30)</td>
<td>1</td>
<td>2.86 (0.69–8.57)</td>
</tr>
<tr>
<td>Brain</td>
<td>2</td>
<td>1.59 (0.95–2.46)</td>
<td>0</td>
<td>–</td>
</tr>
<tr>
<td>Other: kidney, melanoma, bone, and prostate in MtF</td>
<td>4</td>
<td>0.79 (0.57–1.07)</td>
<td>1</td>
<td>0.77 (0.25–1.77)</td>
</tr>
<tr>
<td>Ischemic heart disease</td>
<td>18</td>
<td>1.64 (1.43–1.87)</td>
<td>1</td>
<td>1.19 (0.39–2.74)</td>
</tr>
<tr>
<td>Cerebrovascular accidents</td>
<td>5</td>
<td>1.26 (0.93–1.64)</td>
<td>0</td>
<td>–</td>
</tr>
<tr>
<td>AIDS</td>
<td>16</td>
<td>30.20 (26.0–34.7)</td>
<td>0</td>
<td>–</td>
</tr>
<tr>
<td>Endocrine/diabetes</td>
<td>2</td>
<td>0.85 (0.41–1.32)</td>
<td>0</td>
<td>–</td>
</tr>
<tr>
<td>Respiratory system diseases</td>
<td>4</td>
<td>0.85 (0.61–1.14)</td>
<td>0</td>
<td>–</td>
</tr>
<tr>
<td>Digestive system diseases</td>
<td>3</td>
<td>1.01 (0.68–1.45)</td>
<td>1</td>
<td>2.56 (0.62–7.69)</td>
</tr>
<tr>
<td>Genitourinary system disease (ESRD)</td>
<td>1</td>
<td>1.21 (0.58–2.17)</td>
<td>0</td>
<td>–</td>
</tr>
<tr>
<td>Nervous system disease (MS)</td>
<td>0</td>
<td>–</td>
<td>1</td>
<td>3.57 (0.86–10.7)</td>
</tr>
<tr>
<td>External causes</td>
<td>24</td>
<td>7.67 (6.84–8.56)</td>
<td>2</td>
<td>2.22 (1.07–5.44)</td>
</tr>
<tr>
<td>Illicit drugs use</td>
<td>5</td>
<td>13.20 (9.70–17.6)</td>
<td>1</td>
<td>25.00 (6.00–32.5)</td>
</tr>
<tr>
<td>Suicide</td>
<td>17</td>
<td>5.70 (4.93–6.54)</td>
<td>1</td>
<td>2.22 (0.53–6.18)</td>
</tr>
<tr>
<td>Unknown/ill-defined symptoms</td>
<td>21</td>
<td>4.00 (3.52–4.51)</td>
<td>2</td>
<td>2.08 (0.69–4.79)</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>122</strong></td>
<td><strong>1.51 (1.47–1.55)</strong></td>
<td><strong>12</strong></td>
<td><strong>1.12 (0.89–1.59)</strong></td>
</tr>
</tbody>
</table>

CVD RISK IN TRANS WOMEN

• Systematic review and meta analysis¹
  • 23 mostly-European “low-quality” studies
  • 3,231 trans women; mean age range 19-44 years; >80% gonadectomy
• Take home points:
  • E2 associated with ↑ triglycerides 32mg/dL (95% CI 4-60) at ≥24 mos (more w/ oral)
  • VTE 0-5%
  • Mortality 0-13% (of those reporting death, 17% CVD, 19% suicide)
  • Absolute rates were low
  • Long-term risks in older individuals are unknown

• Blood pressure²
  • Mean SBP ↑ 6-18 mmHg, DBP ↑ 3-6 mmHg
• Bodyweight and composition³
  • ↑ bodyweight 1-3 kg/yr
  • ↑ fat mass (2-4 kg) and ↓ lean mass (2-4 kg) in the first year

¹ Maraka S et al. J Clin Endocrinol Metab. 2017
² Irwig MS. Rev Endocr Metab Disord. 2018
³ Tangpricha V, den Heijer M. Lancet Diabetes Endocrinol. 2017
CVD RISK IN TRANS MEN

• Systematic review and meta analysis¹
  • 20 mostly-European “low-quality” studies
  • 1,500 trans men; mean age range 22-38 years; >80% gonadectomy

• Take home points:
  • T was associated with ↑ triglycerides 21mg/dL (95% CI 0.1-43) at ≥24 mos
  • Also ↑ LDL, ↓ HDL to a lesser extent
  • Insufficient data: MI, stroke, VTE, mortality
  • Long-term risks in older individuals are unknown

• Blood pressure²
  • Mean SBP ↑ 1-13 mmHg, DBP ↑ 1.5-4 mmHg

• Bodyweight and composition³
  • ↑ bodyweight 2.2-3.5 kg/yr
  • ↓ fat mass (2.3-4 kg) and ↑ lean mass (1.7-6.0 kg) in the first 1-2 years

¹ Maraka S et al. J Clin Endocrinol Metab. 2017
² Irwig MS. Rev Endocr Metab Disord. 2018
³ Irwig MS. Lancet Diabetes Endocrinol. 2017
U.S. COHORT: VETERANS

• Veterans Health Administration 1996-2013
• 5,135 trans veterans (ICD-9 codes)
• 69% were identified as “male-to-female”
• >25% were 65+ y/o
• Matched to 15,405 non-trans controls

Lifetime mental health and medical illnesses

Brown GR and Jones KT. LGBT Health. 2016
Health and Cardiometabolic Disease in Transgender Adults in the United States: Behavioral Risk Factor Surveillance System 2015

Natalie J. Nokoff,1,2 Sharon Scarbro,3,4,5 Elizabeth Juarez-Colunga,4,6 Kerrie L. Moreau,7,8,9 and Allison Kempe1,2,4

2a

<table>
<thead>
<tr>
<th>Condition</th>
<th>FTM vs Cis F</th>
<th>FTM vs Cis M</th>
<th>OR</th>
<th>LCI</th>
<th>UCI</th>
<th>P_value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Overweight/obese</td>
<td></td>
<td></td>
<td>1.82</td>
<td>0.88</td>
<td>3.79</td>
<td>0.107</td>
</tr>
<tr>
<td>Hypertension</td>
<td></td>
<td></td>
<td>0.96</td>
<td>0.46</td>
<td>2.00</td>
<td>0.92</td>
</tr>
<tr>
<td>Myocardial Infarction</td>
<td></td>
<td></td>
<td>1.23</td>
<td>0.59</td>
<td>2.56</td>
<td>0.58</td>
</tr>
<tr>
<td>Angina/CHD</td>
<td></td>
<td></td>
<td>0.84</td>
<td>0.40</td>
<td>1.75</td>
<td>0.64</td>
</tr>
<tr>
<td>Stroke</td>
<td></td>
<td></td>
<td>1.28</td>
<td>0.41</td>
<td>3.98</td>
<td>0.68</td>
</tr>
<tr>
<td>Diabetes</td>
<td></td>
<td></td>
<td>0.48</td>
<td>0.16</td>
<td>1.51</td>
<td>0.21</td>
</tr>
</tbody>
</table>

2b

<table>
<thead>
<tr>
<th>Condition</th>
<th>MTF vs Cis M</th>
<th>MTF vs Cis F</th>
<th>OR</th>
<th>LCI</th>
<th>UCI</th>
<th>P_value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Overweight/obese</td>
<td></td>
<td></td>
<td>0.93</td>
<td>0.58</td>
<td>1.48</td>
<td>0.76</td>
</tr>
<tr>
<td>Hypertension</td>
<td></td>
<td></td>
<td>1.77</td>
<td>1.11</td>
<td>2.82</td>
<td>0.017</td>
</tr>
<tr>
<td>Myocardial Infarction</td>
<td></td>
<td></td>
<td>0.81</td>
<td>0.56</td>
<td>1.18</td>
<td>0.28</td>
</tr>
<tr>
<td>Angina/CHD</td>
<td></td>
<td></td>
<td>1.19</td>
<td>0.82</td>
<td>1.73</td>
<td>0.37</td>
</tr>
<tr>
<td>Stroke</td>
<td></td>
<td></td>
<td>1.09</td>
<td>0.59</td>
<td>2.03</td>
<td>0.78</td>
</tr>
<tr>
<td>Diabetes</td>
<td></td>
<td></td>
<td>2.87</td>
<td>1.55</td>
<td>5.34</td>
<td>&lt;0.001</td>
</tr>
</tbody>
</table>

Nokoff NJ et al. J Endocr Soc. 2018
TRANS OBESITY: LOCAL DATA

CO Dept of Public Health and Environment. 2014

Overweight/Obesity: Transgender, All Hospitals

N=237

Overweight/Obesity: All Patients, Individual Hospitals

Denver Health

UCHealth

RMR VA

Presented at: Endocrine Society Annual Meeting. 2018
U.S. COHORT: STRONG

Annals of Internal Medicine
Original Research

Cross-sex Hormones and Acute Cardiovascular Events in Transgender Persons
A Cohort Study

Darios Getahun, MD, PhD, MPH; Rebecca Nash, MPH; W. Dana Flanders, MD, MPH, DSc; Tisha C. Baird, MD; Tracy A. Becerra-Culqui, PhD; Lee Cromwell, MS; Enid Hunkeler, MA; Timothy L. Lash, PhD; Andrea Millman, MA; Virginia P. Quinn, PhD; Brandi Robinson, MPH; Douglas Roblin, PhD; Michael J. Silverberg, PhD; Joshua Safer, MD; Jennifer Slovis, MD; Vin Tangpricha, MD, PhD; and Michael Goodman, MD, MPH

- Kaiser Northern & Southern CA, Georgia: 2006-2016

U.S. COHORT: STRONG

• “Transfeminine” cohort: 2,842
  • Non-Hispanic whites: 54%
  • >45 yrs old: 36%
  • Non-current smokers: 85%
  • Overweight/Obesity: 52%
  • Orchiectomy: 1.5%

• “Transmasculine” cohort: 2,118
  • Non-Hispanic whites: 60%
  • >45 yrs old: 15.7%
  • Non-current smokers: 82%
  • Overweight/Obesity: 57%
  • Oophorectomy: 11%

• Reference men: 27,906
  • Reference women: 27,968

• Reference men: 20,780
  • Reference women: 20,807

Quinn VP et al. BMJ Open. 2017
Transfeminine cohort who initiated estrogen therapy during the study period

X-axis: Years from first filled estrogen prescription
Y-axis: Adjusted cumulative incidence of VTE (ischemic stroke similar)

Adapted from: Getahun D et al. Ann Intern Med. 2018
**U.S. COHORT: STRONG**

<table>
<thead>
<tr>
<th>Cohort and Event of Interest</th>
<th>Transmasculine overall cohort (n = 2118)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td><strong>Adjusted HR (95% CI)</strong></td>
</tr>
<tr>
<td></td>
<td><strong>Versus Reference Men</strong></td>
</tr>
<tr>
<td></td>
<td><strong>1.6 (0.9-2.9)</strong></td>
</tr>
<tr>
<td></td>
<td><strong>1.1 (0.6-2.1)</strong></td>
</tr>
<tr>
<td>VTE</td>
<td><strong>Ischemic stroke</strong></td>
</tr>
<tr>
<td></td>
<td><strong>1.1 (0.6-2.0)</strong></td>
</tr>
<tr>
<td></td>
<td><strong>1.3 (0.7-2.5)</strong></td>
</tr>
<tr>
<td>Ischemic stroke</td>
<td><strong>Myocardial infarction</strong></td>
</tr>
<tr>
<td></td>
<td><strong>0.7 (0.3-1.8)</strong></td>
</tr>
<tr>
<td></td>
<td><strong>1.3 (0.5-3.9)</strong></td>
</tr>
</tbody>
</table>

### CVD RISK SUMMARY

<table>
<thead>
<tr>
<th>Condition</th>
<th>Transgender Females</th>
<th>Transgender Males</th>
<th>Strength of Evidence*</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ischemic heart disease</td>
<td>↑↔</td>
<td>←</td>
<td>B-NR</td>
</tr>
<tr>
<td>Cerebrovascular disease</td>
<td>↑</td>
<td>←</td>
<td>B-NR</td>
</tr>
<tr>
<td>Blood pressure</td>
<td>↑↔</td>
<td>↑↔</td>
<td>B-NR</td>
</tr>
<tr>
<td>Venous thromboembolism</td>
<td>↑</td>
<td>←</td>
<td>B-NR</td>
</tr>
<tr>
<td>Lipids (HDL)</td>
<td>↔</td>
<td>↓</td>
<td>B-NR</td>
</tr>
<tr>
<td>Diabetes mellitus</td>
<td>↔</td>
<td>←</td>
<td>B-NR</td>
</tr>
</tbody>
</table>

* B-NR (nonrandomized) =

1) Moderate-quality evidence from 1 or more well-designed, well-executed nonrandomized studies, observational studies, or registry studies

2) Meta-analyses of such studies

Connelly PJ et al. Hypertension. 2019
BUT...NEWEST NEWS: AMSTERDAM COHORT

Table. Standardized Incidence Ratios for Acute Cardiovascular Events in Transwomen and Transmen Receiving Hormone Therapy

<table>
<thead>
<tr>
<th>Acute Cardiovascular Events</th>
<th>OCs (IR)*</th>
<th>Using Women as Reference</th>
<th>Using Men as Reference</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>ECs</td>
<td>SIR (95% CI)</td>
</tr>
<tr>
<td>Transwomen</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Stroke</td>
<td>29 (127)</td>
<td>12.01</td>
<td>2.42 (1.65–3.42)†</td>
</tr>
<tr>
<td>Myocardial infarction</td>
<td>30 (131)</td>
<td>11.38</td>
<td>2.64 (1.81–3.72)†</td>
</tr>
<tr>
<td>Venous thromboembolism</td>
<td>73 (320)</td>
<td>13.22</td>
<td>5.52 (4.36–6.90)†</td>
</tr>
<tr>
<td>Transmen</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Stroke</td>
<td>6 (55)</td>
<td>3.49</td>
<td>1.72 (0.70–3.58)</td>
</tr>
<tr>
<td>Myocardial infarction</td>
<td>11 (100)</td>
<td>2.98</td>
<td>3.69 (1.94–6.42)†</td>
</tr>
<tr>
<td>Venous thromboembolism</td>
<td>2 (18)</td>
<td>4.84</td>
<td>0.41 (0.07–1.37)</td>
</tr>
</tbody>
</table>

ECs indicates expected cases; IR, incidence rate; OCs, observed cases; and SIR, standardized incidence ratio.
*Per 100,000 person-years.
†Significant finding.

Nota N et al. Circulation. 2019
TRANS WOMEN AND INCREASED CVD RISK

Connelly PJ et al. Hypertension. 2019
CVD RISK FACTOR SCREENING IN TRANS ADULTS

Dr. Iwamoto—Do we need special CVD screening considerations in trans adults?

At this point, we don’t know. We need more data!

• Future:
  • What are the underlying mechanisms for increased CVD risk in trans adults?
  • Different screening tests?
  • Screen earlier?
  • More aggressive treatment of CVD risk factors than in healthy young adults?
  • Trans-sensitive behavioral modification strategies?
MANAGEMENT CONSIDERATIONS RE: CVD RISK

• Trans women
  • Estradiol tabs are cheapest
    • Avoid ethinyl estradiol (increased VTE risk)
    • Avoid conjugated equine estrogens (can’t reliably measure estradiol level)
  • Estradiol patch (starting/switching to) – If age >40-50 yrs, smoking, h/o blood clot, migraines, hypertriglyceridemia, hormone-sensitive cancer, significant CVD risk
  • Discuss expectations of weight gain and behavioral modification (diet/exercise) early

• Trans men
  • Injections are cheapest
  • IM/SC routes have similar efficacy (but anecdotally SC may reduce peak/trough sxs)
  • Testosterone patch/gel (starting/switching to) – If significant peak/trough sxs, polycythemia, smoking, older age
    • But may have harder time suppressing breakthrough bleeding
• Cross-sectional studies
  • Trans women (COMIRB #18-2558)
  • Trans men (COMIRB #19-2323)
• Older age (50-75 yrs) vs. younger age (18-40 yrs)
• GAHT ≥1, pre-gonadectomy
• Primary outcome:
  • Brachial artery flow-mediated dilation
• Secondary outcomes:
  • Vascular endothelial cell oxidative stress/inflammation
  • Carotid artery stiffness and IMT
  • Transcranial Doppler
  • Lipids, BMI, physical activity, appetite
  • D-dimer
OUR RESEARCH

- Retrospective chart review (COMIRB #19-2171)
- Effects of estrogen formulations on CVD risk in older vs. younger trans women

- Primary outcomes:
  - Rates of stroke and VTE

- Secondary outcomes:
  - Rates of PE and MI
  - Rates of tobacco smoking
  - Pre-post differences in lipids, BP, DM2, BMI
OUR RESEARCH

• Prospective study (COMIRB #20-0104)
• Effects of estrogen plus spironolactone on biomarkers of coagulation and thrombosis in trans women
• Baseline, 6 months
• Co-primary outcomes
  • D-dimer
  • vWF
  • Factor VIII
UCHEALTH INTEGRATED TRANSGENDER PROGRAM

Clinic contact:
Keily Fisher
keily.fisher@uchealth.org

Referral:
Adult Endocrinology
F64.9 Gender Dysphoria

UCHealth Integrated Transgender Program - Anschutz Medical Campus

Location
Anschutz Outpatient Pavilion
1635 Aurora Court, 6th Floor
Aurora, CO 80045

Phone 720.848.2650

See Transgender Health specialists
LEARNING OBJECTIVES

• Improve confidence in using trans-related terminology
• Summarize how estradiol and testosterone impact CVD risk in trans adults
• Assess CVD risk in trans adults
THANK YOU / QUESTIONS

**Websites:**
• [https://www.genderbread.org/resource/genderbread-person-v4-0](https://www.genderbread.org/resource/genderbread-person-v4-0)
• Colorado Department of Public Health & Environment: [https://drive.google.com/file/d/0B2nM-3jK5N8pbUpLdEg1Sk1JMlk/view](https://drive.google.com/file/d/0B2nM-3jK5N8pbUpLdEg1Sk1JMlk/view)
• UCHealth Integrated Transgender Program: [https://www.uchealth.org/services/diabetes-endocrinology-care/uchealth-integrated-transgender-program/](https://www.uchealth.org/services/diabetes-endocrinology-care/uchealth-integrated-transgender-program/)