








# 6 Underinvested, Under-Referred, and Underserved: Applying a Gender Equity Continuum Framework in Cancer Control Continuum Programs and Policies to Expand to Transgender and Nonbinary Populations

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## ABSTRACT

Gender-inclusive and gender-specific approaches are critically needed in cancer control continuum services to recognize and meet the needs of transgender and nonbinary (trans) populations. Current research, programs, and policies largely cater to cisgender populations and subscribe to a binary, gendered cisnormative ideology, both within health care systems and insurance policies, leaving trans people's cancer prevention and treatment needs neglected. Such disparities can be attributed to the significant gap in funding and research to address trans cancer prevention and treatment. We discuss the research, program, and policy implications of cisnormative practices and provide recommendations for promoting gender-inclusive and specific services across the cancer control continuum with the goal of eliminating cancer disparities and improving cancer outcomes for people of all gender groups, including trans populations.

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## INTRODUCTION

Current estimates have suggested that over 1.6 million adults and youth in the United States are transgender.<sup>1</sup> Transgender is used as an umbrella term to refer to individuals whose gender identity or expression does not align with their sex assigned at birth, whereas cisgender refers to those whose gender identity or expression aligns with their sex assigned at birth. Transgender individuals may exist within or outside the gender binary, including nonbinary, agender, and genderqueer individuals.

Research and services across the cancer control continuum—ranging from etiology, prevention/surveillance, early detection, diagnosis, treatment, survivorship, and end of life—are critical for maintaining the health and well-being of all populations, including transgender and nonbinary (trans) populations who have documented cancer disparities.<sup>2–6</sup> Programs and health policies across the cancer control continuum, however, are yet to be fully characterized and envisioned for, with, and by trans populations, health professionals, and scientists. An agenda for gender-inclusive and gender-specific approaches to cancer control is essential.<sup>7</sup>

Trans people experience cancer inequities, as a result of myriad health challenges, informed largely by cisnormative socioeconomic, political, and cultural contexts and

cisnormative, gendered systems, along with other intersectional forms of discrimination such as those rooted in racism, sexism, classism, and ableism that uphold prevailing asymmetries of power.<sup>8,9</sup> These oppressive systems can fuel medical mistrust, which can result in trans people foregoing necessary medical care<sup>10</sup> to avoid stigmatizing health care experiences with primary care, cancer providers, and other health professionals. Trans people face overt discrimination against them or are prevented from accessing services by interpersonal prejudice, institutional barriers, and via legislation—all of which push trans people further away from access to current cancer health care systems and drive cancer inequities.<sup>3</sup> In this piece, we as trans epidemiologists, researchers, primary care physicians, oncologists, and allies, collectively reflect on health equity and use intersectionality and inclusion principles to investigate current prevailing gendered systems and practices within cancer care. Using a gender equity continuum framework,<sup>11</sup> we delineate gender-specific and gender-inclusive approaches that can expand and transform existing cancer control continuum services, programs, and policies across all gender groups, specifically as they relate to trans populations.

Currently, there are no established cancer screening guidelines for trans patients at any point in their transition. Current recommendations for cancer control services operationalize gender as binary, as only women assigned

female at birth and men assigned male at birth and assume cis alignment with binary biological and physiological sex characteristics. Furthermore, these recommendations fail to acknowledge sex beyond the binary, such as the consideration of intersex individuals.<sup>12</sup> Gender-specific clinical cancer screening guidelines, especially those generated and endorsed by major professional medical establishments, such as the American Cancer Society<sup>13</sup> and American Medical Association,<sup>14–18</sup> default to assuming cis populations as the only patient population in addition to subscribing to binary gendered cisnormative system.<sup>7,19</sup> Preventive health services and programs that have adopted this system are often not inclusive of all trans populations, as well as specific to each gender group within trans populations, such as transfeminine/trans women, transmasculine/trans men, and nonbinary people. Consequently, trans populations are ancillary and less prioritized in cancer screening services and research in relation to other groups.<sup>20,21</sup> The current version of the World Professional Association of Transgender Health (WPATH) standards of care has aimed to address these gaps and substantially provided clinical guidelines on cancer screening, treatment, and care<sup>22</sup> particularly in the context of medical gender affirmation surgical procedures (ie, screening for breast cancer before breast augmentation, screening for cervical cancer, screening for cancer as part of surgical aftercare). Still, progress in improving guidelines remains limited as data involving the development of research guidelines and practice remain largely catered to cisgender populations. To the best of our team's knowledge, there is no consensus on best practices for specific cancer prevention or screening for trans patients that holistically account for their histories (or lack) of medical gender affirmation procedures and existing organs. Nor are there consensus guidelines to facilitate shared decision making in the setting of situations particular to trans populations (eg, how to reduce breast cancer risk in the setting of breast cancer gene or *BRCA* mutations for trans people on estrogen therapy).

To provide context on how cisgenderism in guidelines contributes to screening inequities and how guidelines adapted from cisgender populations do not simply translate into practice for trans populations, one study assessed adherence to these existing screening guidelines in trans and nonbinary individuals, which included guidelines from WPATH, American Cancer Society, and United States Preventive Services Task Force (USPSTF) guidelines.<sup>23</sup> This study found low screening rates for breast, cervical, prostate, and colon cancer in this cohort compared with national rates for cisgender populations.<sup>23</sup> For instance, compared with national rates for cisgender populations, 50.9% (v 69.1%) of eligible trans individuals received a mammogram, 48.3% (v 82.9%) received a human papillomavirus (HPV)/Pap test, 11.1% (v 31.5%) received a prostate-specific antigen (PSA) test, and 50% (v 60.6%) received a colonoscopy. These rates show the importance of developing gender-specific guidelines that include trans people as part of the development and research, instead of merely adapting guidelines created

for cisgender population and applying them to trans populations.

This has also been true up until recently of cancer treatment guidelines, which were recently revised to end trans exclusivity. The American Cancer Society has recently developed protocols on using updated guidance for inclusive and gender-affirming terminology for individuals engaged in cancer care.<sup>24</sup> The American College of Obstetricians and Gynecologists guidelines for cervical cancer removed gender from its recommendations.<sup>25</sup> The USPSTF guidelines are also currently undergoing revision to address these issues, with their most recent update on breast cancer screening.<sup>26</sup> Despite shifts in language in guidelines to be gender-inclusive, there are no guidelines specific to caring for trans people or that address issues of particular importance to trans populations. These include considerations about breast cancer treatment in the context of testosterone use, for example. Cancer treatment itself is also often oriented to a binary cisnormative framework, although some oncologists and others have called for a more gender-inclusive lens to guide cancer clinical trial eligibility,<sup>27</sup> guidelines,<sup>28</sup> cancer courses, subspecialty care, laboratory value reference ranges, and drug dosing.<sup>29</sup>

## CANCER CARE PROGRAMMING DISPARITIES AND INVESTMENT GAPS FOR TRANS POPULATIONS

The dearth of available epidemiological data among trans populations prevents a robust public health and biomedical response to the cancer burden among trans populations. Current evidence is limited to case reports, electronic medical reports data, Behavioral Risk Factor Surveillance System (BRFSS) data, and small community-based samples,<sup>3</sup> as well as perspective pieces calling for inclusive cancer care for trans populations with cancer.<sup>8,30–32</sup> Moreover, such reports and programming data should be further disaggregated, analyzed, and reported with an intersectional approach across lines of race, ethnicity, socioeconomic status, disability, and sexual orientation, among others, to further illuminate and understand how to address intersectional inequities and assess how these programs are able to meet the cancer care needs of marginalized communities, improve outcomes, and promote equity effectively.

Although the largest national cancer surveillance (ie, National Cancer Institute's [NCI] SEER) does not have the ability to determine transgender status accurately, a recent systematic review on chronic disease burden within trans populations identified a gap in research on age-related chronic conditions such as cancer, with only 12% of studies ( $k = 11/93$  studies) including cancer outcomes. Due to the lack of an intersectional approach to data reporting, disaggregating the findings of these studies across intersectional identities is challenging, limiting our ability to fully understand the unique experiences and disparities faced by various minoritized groups and to develop targeted interventions that address their programming needs. The 11

studies offered mixed evidence on cancer burden (for both overall morbidity and specific cancer types) for trans individuals.<sup>33</sup> As an example, one study of Medicare data found a significantly higher prevalence of several cancers among trans beneficiaries compared with cis beneficiaries (eg, lung cancer incidence is 2.5% for transgender feminine and nonbinary [TFN], 2.7% for transgender masculine and nonbinary [TNB] v 2.3% for cisgender men, and 1.7% for cisgender women; breast cancer incidence is 0.4% for TFN, 7.5% for TNB v 0.1 for cisgender men, and 6.2% for cisgender women; colorectal cancer incidence is 3.6% for TFN, 3.1% for TMN v 2.7% for cisgender men, and 2.1% for cisgender women; endometrial cancer incidence is 1.7% for TMN v 1.1% for cisgender women; prostate cancer incidence is 11.2% for TFM v 10.1% for cisgender men).<sup>34</sup> A study comparing cancer stage at diagnosis, treatment, and survival between trans and cis patients in the National Cancer Database found trans patients may be diagnosed at later stages, less likely to receive treatment, and have worse survival for various cancer types.<sup>35–38</sup>

Multiple inadequacies in the current programming contribute to cancer disparities. These deterrents include lack of recording of gender identities, anatomy inventories, and screening needs in medical records; lack of health campaigns that outreach to trans people; minimal cancer provider education about trans people; low referral practices for trans patients to be screened for cancer; and lack of trans physicians.<sup>3</sup> Additionally, trans people accessing oncologic care and treatment have faced gender-based discrimination, social stigma, paternalistic messaging around gendered reproductive expectations based on anatomy, and the general lack of cancer providers' interdisciplinary training in trans health.<sup>39,40</sup> Furthermore, heightened dysphoria around anatomy and gendered health care settings decrease trans patients' chance of seeking, receiving, or being referred for screenings.<sup>6,40</sup> There is a lack of anatomical inventories and concomitant screening reminders on the basis of body parts. Trans patients with cancer may also feel uncomfortable in both screening and treatment facilities due to the lack of consideration for gender-accessible or gender-affirming approaches to cancer care health systems (eg, no gender-neutral bathrooms, only pink gowns for mammography) and inadequate clinician training to facilitate conversations on cancer treatments' potential impact on gender goals and managing gender-affirming medical needs such as hormones in the context of cancer care.<sup>30,39</sup> As such, ensuring that these facilities are welcoming from the viewpoint of trans patients is a key factor of improvement in this field.<sup>41</sup>

Due to systemic discrimination, trans people diagnosed with cancer are also more likely to experience poor mental and physical health and have higher odds of risk factors (eg, smoking) that could lead to poor treatment outcomes and cancer recurrence.<sup>42</sup> Finally, racism, classism, ableism, and other intersecting oppressions exacerbate these health disparities and shape cancer control continuum outcomes within the trans population. There is limited research on

cancer among trans people of color; however, social determinants of health including economic stability, neighborhood and physical environment features, health care system resources and quality, and policy measures likely adversely affect cancer control outcomes.<sup>43</sup> In particular, for trans people, navigating cancer care in fragmented and overburdened health care systems requires assessing safety and making decisions about identity disclosure in every new encounter.<sup>44</sup> Furthermore, these challenges in navigating health care systems vary substantially within and outside the United States as a result of transphobic laws and lack of legal or social protections for trans people. This gap in international recognition and rights of trans people has serious implications for violations for their health and bodily autonomy.<sup>45</sup>

Such disparities in cancer control continuum programming stem from minimal investments in research that examines gender-affirming care in relation to cancer outcomes, risk, and control services.<sup>46</sup> Although sexual and gender minority (SGM) populations have been identified as part of National Institutes of Health (NIH) priority populations,<sup>47</sup> investments continue to lag. For example, in the NIH 2021 Portfolio Analysis Fiscal Year report,<sup>48</sup> only 6.6% (out of 544) of SGM projects funded are specific to cancer research, compared with the total NIH funding for cancer that year being \$7,362 million in US dollars. This equates to 0.24% of the entire NIH portfolio specific to cancer research. Given that SGM populations are inclusive of the larger lesbian, gay, bisexual, transgender, and queer (LGBTQ+) communities, it is very likely that the investments in research that solely or primarily focus on trans populations are even lower. As of May 2024, the NIH reporter search yielded seven studies funded by the NCI specifically about trans people and cancer. Data on actual cancer programming and the extent to which they are inclusive of the trans population in the United States remain uncounted and unavailable. Future national cancer programming evaluations should consider examining this important gap.

## OVERVIEW OF CURRENT CANCER PROGRAMMATIC SERVICES FOR TRANS POPULATIONS

### Cancer Screenings and Prevention

Routine cancer screenings among trans populations are frequently overlooked, placing trans individuals in a position where they are less likely to complete cancer screenings.<sup>49</sup> This inequity is largely driven by two factors: (1) lack of data characterizing screening by cancer types and (2) lack of evidence-based intervention and programming best practices to increase cancer screenings among trans people. Below, we briefly delineate the gaps in cancer screening research and practice.

To our knowledge, there are few formally evaluated and scalable evidence-based trans-specific cancer initiatives or programming interventions for increasing screening referral

and uptake designed for trans populations, in community, clinical, or at-home settings.<sup>50</sup> Although trans people have suggested the need for culturally sensitive interventions involving clinician training to use gender-congruent language (eg, use of the correct pronouns and name), assess trans bodies for cancer, understand risks associated with hormone use, and collect sexual orientation and gender identity formation at intake, other screening interventions could include mobile health units for cervical cancer screening that could provide care in rural areas and at places where trans people gather, for example, Pride events.<sup>50</sup>

One promising intervention includes self-collected HPV screening,<sup>51,52</sup> but has not been fully tested for effectiveness nor widely adopted as part of core cancer programming across health systems specific to trans populations. Notably, although there are challenges associated with cervical cancer screening due to vaginal atrophy and a decrease in cervical cellularity due to testosterone use, resulting in inadequate Pap tests,<sup>53</sup> the use of self-swabs in cervical cancer screening may help patients dealing with increased dysphoria or discomfort associated with pelvic examinations.<sup>53</sup> Studies among trans men have shown high concordance between clinician-performed HPV swabs and patient self-swabs.<sup>53</sup> On the other hand, research has found that estrogen may cause prostate atrophy in trans women, although studies are limited.<sup>53,54</sup> Data on whether prostate cancer screening through a PSA test should be offered to transfeminine populations remain scant.<sup>53-56</sup> Other behavioral-based interventions like culturally targeted smoking cessation also showed modest promise in achieving outcomes like quit rates.<sup>57</sup>

A handful of LGBTQ cancer-focused programming, support groups, and organizations exist to improve inclusion in programming,<sup>58,59</sup> including the National LGBTQI+ Cancer Network,<sup>60</sup> which increases LGBTQI+ community knowledge about cancer risks, offering co-brandable tailored health promotion campaigns, providing in-person and enduring cultural competency training options for providers, offering free virtual support groups three times per week, and visualizing unmet needs and treatment importance of LGBTQI+ survivors within mainstream cancer organizations, media campaigns, and research. Additionally, the US Preventive Services Task Force offers guidelines on addressing sex and gender in primary care and clinical preventive services, one of the few cancer screening guidelines that considers trans populations.<sup>6,61</sup> Within these existing guidelines, most are focused mainly on screening for cancer in the reproductive organs of trans people, overlooking other major types of cancer that trans people experience. Screening guidelines remain highly reflective of binary gendered cisnormativity categorizations, instead of being organ-specific.

Programming within cancer screenings for the general population remains highly cisnormative and leaves out trans people. For example, intake screening forms with questions that assume a patient's gender will reflect that which is typically associated with their sex assigned at birth (eg, If

you are a woman, when was your last menstrual period?) and without a means for patients to indicate sex assigned at birth or history of surgeries may overlook and stigmatize trans populations. Trans men who report their gender as men may not be offered cervical cancer screenings or may be denied health insurance coverage for cervical cancer screening if one is given, given that medical providers and staff within health care settings and insurance companies are trained and required to code this procedure as limited to women.<sup>62</sup> Intake forms that do not query organ-specific surgeries may also inevitably lead to stigmatization and poor quality care for trans men and nonbinary people with a history of chest masculinization (ie, have had breast removal as part of their gender goals) by clinicians who inappropriately recommend breast cancer screening. Conversely, some trans women and nonbinary people with a history of chest feminization may not be asked about breast cancer screening due to gendered assumptions of clinicians regarding this procedure.

Research in cancer screening rates by cancer type among trans populations lags as well, including studies that characterize social determinants affecting cancer screening.<sup>4,33</sup> For instance, one study using BRFSS data found trans participants were less likely to have undergone breast and cervical cancer screening compared with the cis population; in addition, they were less likely to have a primary care physician,<sup>63</sup> which further affects adherence to screening recommendations and connections to cancer care given that primary care providers are often one of the first health care professionals who trans people interact within health care settings. There is also scant research on cancer screening services outside of reproductive care, such as lung cancer screenings,<sup>64</sup> despite literature showing disproportional tobacco and alcohol consumption behaviors in this population.<sup>65,66</sup> Similarly, lower screening prevalence for cervical, breast, and colorectal cancers has been observed for trans individuals than cis individuals.<sup>64</sup>

Moreover, studies that have previously assessed cancer screening outcomes among trans people using gender-affirming hormone therapy (GAHT) erroneously suggest screening guidelines for cis populations are sufficient for trans people.<sup>67</sup> This is untrue, however, particularly given such studies' limitations including missing or incomplete information about hormone use, family history, and other risk factors for cancer, and that most guidelines stem their findings from surveillance data and research that is not gender-inclusive.<sup>67</sup> Given these disparities, studies that are gender-inclusive or are designed to recognize trans identities to further characterize screening uptake and those that delineate the personal, interpersonal/social, environmental, and structural factors that drive these inequities are necessary.<sup>4</sup>

## Cancer Treatment and Hormone Therapy

The long-term impact of GAHT on cancer risks and the integration and co-prescribing practices of GAHT with



cancer treatments, particularly hormone-interactive cancers, are unknown.<sup>4</sup> The overall lack of comprehensive evidence can result in providers pre-emptively refusing to allow or continue GAHT, which then affects the patient's mental health. Some retrospective studies suggest that trans people on estrogen have higher rates of breast cancer than cisgender men and lower than cisgender women.<sup>67</sup> Retrospective data also suggest that transgender people on estrogen and androgen suppression have lower rates of prostate cancer than cisgender men; however, these data are correlative and subject to confounding and various biases.<sup>68</sup>

In the setting of most types of cancers besides breast, endometrial, and prostate cancers, there are no data to suggest that endogenous or exogenous estrogen or testosterone would affect cancer outcomes, yet clinicians may suggest cessation of hormone therapy regardless. The cessation of GAHT for cancer treatments may increase mental health morbidity and affect cancer treatment compliance and other patient-reported outcomes.<sup>8,69</sup> Psychological distress due to the cessation of GAHT may outweigh potential benefits to cessation, especially given the limited literature on the true therapeutic benefits to cessation of GAHT in the setting of cancer treatment.<sup>70</sup> Unfortunately, providers have no guidance on how to assess this psychological distress, and there have been instances of them summarily stopping GAHT without even patient consultation. And shared decision making about treatment and GAHT that aligns with trans patients' gender goals is considered best practice by WPATH.<sup>22</sup>

Addressing areas of uncertainty related to GAHT and cancer risk is a research priority. For example, ongoing clinical uncertainty exists regarding the optimal treatment for trans people on testosterone in the setting of an estrogen or androgen receptor-positive breast cancer and the treatment of trans people on estrogen in the setting of prostate cancer (ie, what is the risk of prostate cancer among trans people on estrogen and antiandrogens?). Moreover, screening questions remain regarding the PSA reference ranges for transfeminine individuals exposed to estrogen, antiandrogens, or who have undergone an orchiectomy.<sup>71</sup> These populations do not have homogeneous exposure to GAHT and likely would not be expected to have the same PSA levels in the absence of prostate cancer. There is variation between transfeminine individuals and cisgender men, as well as variation among transfeminine individuals based on their history of surgical interventions and the use and dosage of GAHT.<sup>72,73</sup> The need for breast cancer screening for transfeminine individuals receiving estrogen and transmasculine individuals who receive treatment with androgens and/or have undergone chest surgeries is also unclear given inconsistent evidence.<sup>70</sup> Another area of concern is that guidelines prioritize anatomy-sparing interventions, but some trans people and others may prioritize anatomy-removing interventions. Many such patients do not receive support from clinicians in their decisions.

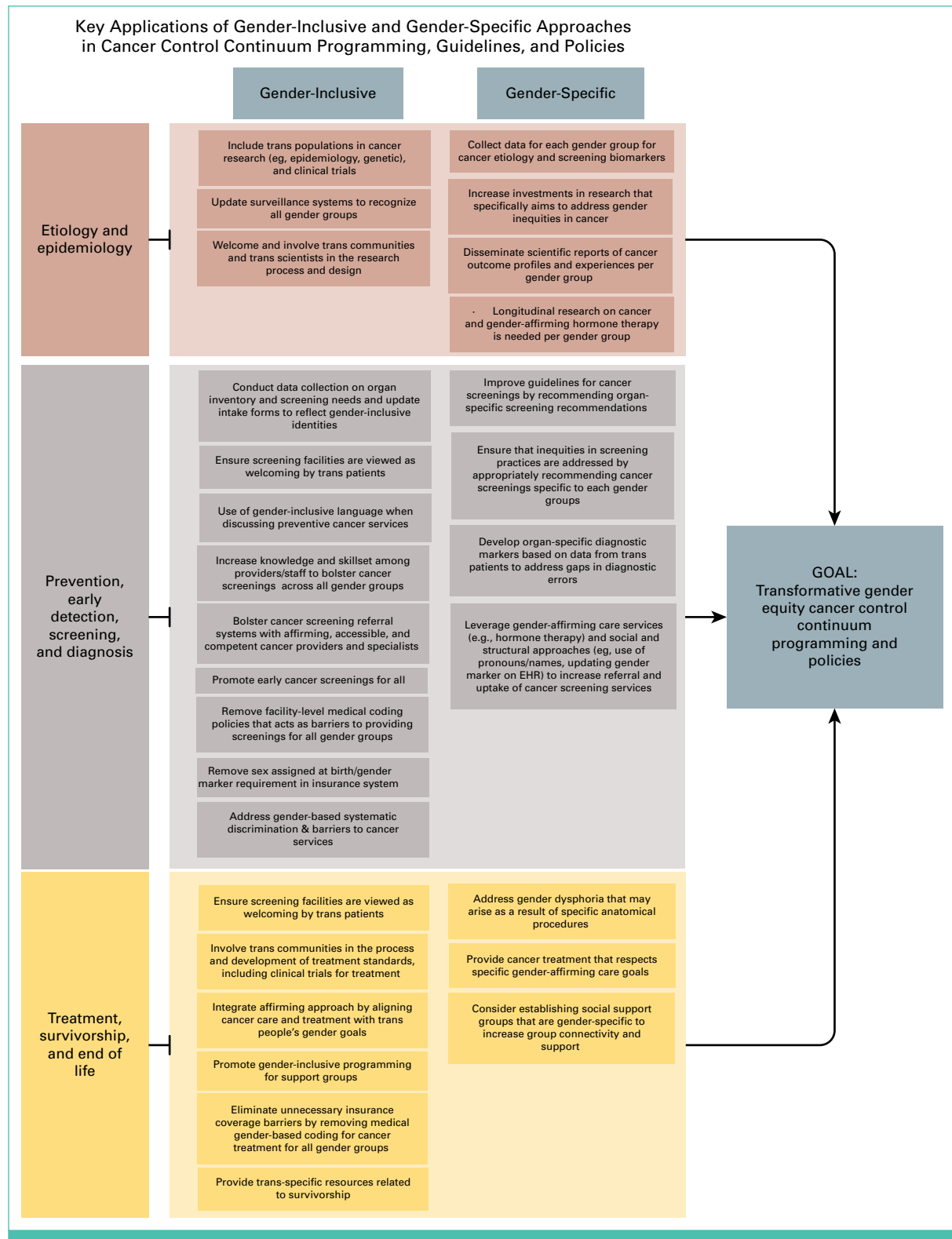
Of important consideration, monitoring cancer outcomes is particularly critical for aging trans people who may have had a long history of GAHT utilization.<sup>74</sup> This is particularly important as studies have shown that medical providers are not equipped with the appropriate knowledge and skills to provide treatment and care to aging trans populations that affirm and align with their gender goals, including continuation of GAHT use.<sup>75-77</sup>

Finally, clinical trials advancing cancer treatment discoveries have also been rapidly becoming the standard of care for cancer treatment and management.<sup>78,79</sup> Trial protocol adaptations and assessments barely consider trans populations' participation,<sup>80</sup> leaving trans people to be excluded and not receive access to clinical trials.<sup>27</sup> These exclusions may include conflating sex assigned at birth with gender in clinical trial data collection and dissemination and using language for inclusion criteria that does not reflect the experiences of trans people, such as using medical language that assumes reproductive anatomy or linking gender to specific cancer types.

### Impact of Gendered Health Care, Insurance Systems, and Policies on Cancer Services

Medical facilities and health insurance companies play key roles in institutionalizing the binary-gendered cisnormative system of cancer control services via policies, practices, norms, and recommendations—thereby prioritizing the needs of cis populations, reinforcing cisnormativity, and overlooking trans people.

Trans individuals may not be able to access cancer-related health care due to lack of inclusive insurance coverage for tests or procedures based only on binary sex assigned at birth.<sup>69</sup> Such access varies based on the health care system (eg, single payer v universal, public v private insurance) across nations. In the United States, for example, existing insurance policies such as Medicaid and Medicare adopt binary definitions of sex and gender,<sup>62</sup> consequently limiting the coverage of services along the cancer control continuum for trans populations. For example, insurance reporting systems typically categorize certain cancers such as breast, cervical, endometrial, and ovarian as women's cancers and adopt gender qualifiers that are based on sex assigned at birth.<sup>81</sup> For instance, some health insurance plans may refuse to cover pap tests for someone who is registered as male in their system.<sup>82</sup> Not only does this type of coding conflate gender and sex, but it systematically excludes trans populations from cancer control services. Trans people whose sex is assigned female at birth or do not identify as a woman may also be overlooked or actively denied insurance for proper cancer screening procedures even when recommended by a provider. Similarly, electronic medical records (EMRs) can further complicate a provider's ability to address patient needs if diagnosis codes are inconsistent with someone's sex or gender marker, partly because of informatics issues in linking EMR with insurance data systems.<sup>83</sup>



**FIG 1.** Illustrated key application of gender-inclusive and gender-specific approaches in cancer control continuum programming, guidelines, and policies. EHR, electronic health record.

A clinician may recommend a prostate examination for a trans woman registered as a woman, but the EMR will not display the appropriate checkboxes to proceed with this screening service, and the service may not be recognized by

health care insurance systems.<sup>82</sup> Globally, there is a need to examine how different health care systems across different settings are responding to trans people's cancer health needs.

**TABLE 1.** Description of Key Gender-Inclusive and Gender-Specific Approaches in Cancer Programming, Guidelines, and Policies

Cancer Control Continuum	Gender-Inclusive Approach	Gender-Specific Approach
Etiology and epidemiology	<p>Include trans populations in cancer research and clinical trials, particularly in epidemiological and genetic studies, as well as clinical trials. This includes ensuring trans populations are considered and welcomed when developing recruitment methods or approaches, collecting inclusive gender identity data, addressing misclassification and selection bias, prioritizing gender self-report, and using affirming and nonstigmatizing language in clinical trial protocols, descriptions, and eligibility criteria</p> <p>Update surveillance systems such as the National Cancer Institute's SEER Program, state and regional cancer registries, and other nationally representative surveys (eg, the BRFSS) with gender-inclusive data measures.<sup>29,39</sup></p> <p>Involve trans communities and trans scientists in the research process and design</p> <p>Collect data on biological factors such as anatomy, hormonal milieu, and body size for which sex is often used as an imperfect proxy</p>	<p>Collect data for each gender group (eg, transfeminine, trans-masculine, nonbinary) on the implications of long-term hormone therapy for cancer etiology and cancer screening biomarkers (eg, differences in PSA levels among transfeminine individuals who are exposed to estrogen, antiandrogens, and undergone orchiectomy)</p> <p>Increase investments in cancer epidemiological research that specifically aims to address gender inequities and gaps in research for trans people</p> <p>Longitudinal research on cancer and gender-affirming hormone therapy is needed per gender group</p> <p>Disseminate and publish scientific reports that highlight cancer experiences, incidence, and outcomes by gender group</p>
Prevention, early detection, screening, and diagnosis	<p>Ensure care facilities are viewed as welcoming by trans patients</p> <p>Conduct data collection on organ inventory and screening needs and update intake forms to reflect gender-inclusive identities</p> <p>Facilitate use of gender-inclusive language when discussing preventive cancer services with patients in clinical settings</p> <p>Increase comprehensive knowledge and skillset among providers and health care staff to bolster cancer screening practices and health needs across all gender groups</p> <p>Bolster cancer screening referral systems with competent, affirming, and accessible providers and health care staff in providing preventive, early detection, screening, and diagnosis services across all gender groups</p> <p>Promote early cancer screenings in primary care settings across all gender groups, particularly when primary care clinics and practices are key accessibility points among trans populations</p> <p>Remove facility-level medical coding policies that act as barriers to providing screenings for trans populations</p> <p>Remove barriers such as sex assigned at birth/gender marker requirement in insurance system to provide more expansive insurance coverage across gender groups for preventive cancer screening services and procedural referrals</p> <p>Address gender-based systematic discrimination and barriers to health care to promote early detection, decrease cancer incidence, and improve mortality</p>	<p>Modify cancer screening guidelines so that they are based on anatomy rather than sex or gender</p> <p>Promote anatomical inventory among clinicians to increase appropriate screening recommendations</p> <p>Ensure that inequities in screening practices are addressed by training clinicians to appropriately recommend cancer screenings specific to each gender groups</p> <p>Develop organ-specific diagnostic markers based on data from trans patients to address gaps in diagnostic errors</p> <p>Examine how gender-affirming care services (eg, hormone therapy) and approach (eg, social affirmation like use of pronouns/names, structural affirmation such as updating gender marker on EHR) can be leveraged and integrated to increase referral and uptake of cancer screening services</p>
Treatment, survivorship, end of life	<p>Ensure care facilities are viewed as welcoming by trans patients</p> <p>Involve trans communities in the process and development of treatment standards</p> <p>Integrate gender-affirming approach in cancer care and treatment by understanding how trans people's gender goals, including describing how medical gender-affirming care, may or may not affect cancer care and treatment, and promote alignment between gender goals and cancer treatment options</p> <p>Include trans people in clinical trials that provide treatment intervention</p> <p>Promote gender-inclusive programming for support groups. For instance, expand binary gendered definitions of support systems</p> <p>Eliminate unnecessary insurance coverage barriers by removing medical gender-based coding for cancer treatment for all gender groups</p> <p>Provide trans-specific resources related to survivorship</p>	<p>Address gender dysphoria that may arise during specific procedures (eg, colposcopy) and serve as a barrier to cancer treatment</p> <p>Provide cancer treatment options for trans patients that support patients' gender-affirming care goals</p> <p>In addition to inclusive support groups, also consider establishing social support groups and caregivers that are gender-specific to increase shared group connectivity and support for trans survivors</p> <p>Give consideration to social determinants such as homelessness and spiritual care in palliative stage of cancer care</p>

Abbreviations: BRFSS, Behavioral Risk Factor Surveillance System; EHR, electronic health record; PSA, prostate-specific antigen.

A critical transformation of binary constructions of gender in the biomedical classification of cancers in insurance coding systems and coverage policies is highly needed.<sup>84</sup> One recommendation is for insurers and health care systems to adopt

a gender-inclusive approach in coding systems that removes gender and sex from the coding equation for insurance billing and procedure codes. Doing so would mean that billing or procedure codes would be based on cancer diagnosis or

screening needs as recommended by the provider. This would enable coverage of cancer procedures for people of all genders regardless of patients' sex assigned at birth.

## TOWARDS GENDER-INCLUSIVE AND GENDER-SPECIFIC APPROACH TO CANCER CONTROL CONTINUUM

In recent years, the medical and public health communities have become increasingly aware of the unique cancer needs of trans communities. For instance, scholars in the field have identified gaps in health care and provided recommendations for improvement in designing programs, developing guidelines, and improving policies.<sup>2-6,8,9,30,85,86</sup> Health agencies and professional medical associations have also called for inclusive practices.<sup>14,24,32,47,61</sup> Despite these efforts, there is currently no established gold standard for approaching cancer control continuum services tailored to trans populations, perhaps due to a combination of the lack of investment in cancer research and programming for trans communities and the fact that research in this area is still in its early stages and not yet fully integrated with the field of trans health. To provide guidance on this integration, we provide in [Figure 1](#) an illustration and in [Table 1](#) a description of a nonexhaustive list of gender-inclusive and gender-specific approaches to cancer programming and policies, across the cancer control continuum. Although the framework for gender-inclusive and gender-specific approaches in trans health has been described in detail,<sup>7,11</sup> this list of recommendations is an application of this framework to the cancer control continuum to promote transformative gender inclusivity specifically at the programming and policy levels.

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In conclusion, effective ways to address the significant gaps and biases across the cancer control continuum for trans populations are urgently needed. Some research, program, and policy priorities include the following: (1) Expanding the scope of research by applying both gender-inclusive and gender-specific approaches to better comprehend the shared and unique cancer risks and treatment needs of trans communities. A critical area of exploration should be the long-term impact of various modalities of gender-affirming hormone therapy on cancer risks and outcomes. This would provide a foundation for developing comprehensive and specific cancer prevention, screening, and care guidelines for trans patients at risk of and living with cancer, accounting for their histories (or lack thereof) of medical gender affirmation procedures. (2) Investing in the design and implementation of programs that are not only inclusive of all gender identities, but also specifically tailored to meet the unique needs of each group within trans populations. (3) Enacting policy revisions that dismantle the cisnormative system currently dominating health care and insurance coverage. These revised policies should favor a system that recognizes and accommodates all gender groups, including trans groups, ensuring that trans individuals can access necessary cancer-related health care and that their unique needs are met. Implementing these measures is not only a matter of health equity but also a critical step toward eliminating cancer disparities. By investing in research, developing inclusive and tailored programs, and revising outdated policies, we can ensure that all individuals, regardless of their gender identity, have equal and equitable access to high-quality cancer control continuum services.

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## AUTHORS' DISCLOSURES OF POTENTIAL CONFLICTS OF INTEREST

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