ORIGINAL RESEARCH

Implementation of Transgender/Gender Nonbinary Care in a Family Medicine Teaching Practice

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Purpose: **Numerous studies have shown that transgender or gender nonbinary (TGNB) individuals encounter significantly more health care barriers, including overall lack of access to gender-affirming care providers. This study describes 2 assessments of transgender care services at a large family medicine teaching practice.**

Methods: **Staff and providers were invited to attend an optional, practice-wide, hourlong free training session on gender-affirming care offered on 3 different dates in 2019. A structured protocol was used to collect observational data from which key takeaways from the training sessions were developed. Separately, a retrospective chart review of patients with a gender dysphoria diagnosis was completed. Charts were reviewed for adherence to regional and international organization recommendations for comprehensive transgender care.**

Results: **Three main takeaways from the training sessions included lack of knowledge or familiarity with gender terminology and expression, fear of offending patients, and employee hesitation to change behaviors when interacting with patients. On chart review, the most common interventions identified were need to schedule a follow-up visit (61.5%), need for health maintenance screenings (osteoporosis screening, 50%; Papanicolaou smear, 56.3%; mammogram, 66.7%), need for mental health screening (41.5%), need for laboratory monitoring of testosterone therapy (20%), and corrected gender markers/names listed in the appropriate place in the patient chart (16.9%).**

Conclusions: **This study highlighted hesitation to provide and lack of familiarity with transgender care among practice staff. Although some aspects of comprehensive transgender care are well implemented, maintaining follow-up, completing health maintenance and mental health screenings, and appropriate laboratory monitoring are areas for improvement. (J Am Board Fam Med 2022;35:235–243.)**

Keywords: **Delivery of Health Care, Family Medicine, Gender Dysphoria, LGBTQ Persons, Minority Health, Primary Health Care, Retrospective Studies, Transgender Persons**

Introduction

An estimated 1.4 million adults in the United States openly identify as transgender or gender nonbinary (TGNB), representing 0.4% of the population.[1,2] This number, however, does not account for individuals who are not openly TGNB, and larger estimates are as high as 2.3 million adults.[1] It is well documented that TGNB individuals face higher levels of discrimination, including in health care settings, where 24% report being denied equal treatment and 25% report being harassed or

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disrespected.[3] TGNB individuals are also at higher risk for mental health concerns and are over 4 times more likely to be diagnosed with at least 1 psychiatric illness, and 40% of transgender individuals report attempting suicide in their lifetime.[4,5]

Gender dysphoria can be mitigated by gender-affirming health care, including the use of gender-affirming hormone therapy (GAHT), when desired by the patient. However, medical education in the care of TGNB individuals is lacking. A 2018 systematic review noted that medical education in North America varied widely, with only 16% of medical schools reporting comprehensive lesbian, gay, bisexual, transgender, and queer (LGBTQ+) competency training, and the limited graduate medical education literature was published primarily by plastic surgery and urology specialists.[6] Furthermore, TGNB individuals face many access barriers within the health care system, including discriminatory health insurance policies in addition to the overall lack of access to gender-affirming care providers.[7]

In addition to supporting and connecting patients to mental health services when needed, TGNB individuals need access to routine care.[7] Primary care practitioners, especially family physicians, are accessible and well-equipped to provide comprehensive care to TGNB individuals. Several organizations have put forth recommendations to aid in the delivery of this care, including University of California at San Francisco (UCSF), World Professional Association for Transgender Health (WPATH), and Fenway Health.[8–10] These recommendations describe the importance of cultural sensitivity and language in the health care setting, as well as provide clinical recommendations for prescribing and monitoring GAHT. Every interaction with the health care system can be hugely impactful on the experience of TGNB individuals—from scheduling staff to the community pharmacy.[11] Gaining empathy for and further understanding of this patient population begins with education. Few studies have been conducted to gauge the impact of education programs to improve health care access for TGNB individuals, but it has been demonstrated that when transgender education sessions are presented to staff and providers, positive change can be observed with as little as a 1 hourlong training session.[6,12]

Although organizational recommendations are readily accessible, there are no studies investigating the implementation of these recommendations in the primary care setting. Most studies that are available focus on cancer screenings, all which revealed TGNB persons are not adequately screened when compared with cisgender individuals due to lack of provider guidance on preventative health screenings in this population.[13–15] There is limited information regarding continuity of care and follow-up, including mental health screenings, laboratory monitoring of GAHT, and annual preventive visits. Given the landscape of TGNB health care, the purpose of this study was to describe 2 independent initiatives promoting TGNB care in a large family medicine teaching practice: (1) describe the reactions of staff and providers to a 1 hourlong transgender care training session and (2) assess the implementation of organizational recommendations for comprehensive TGNB care.

Methods

This study was completed at the Mountain Area Health Education Center (MAHEC). MAHEC is a large health care organization serving patients in 16 counties in western North Carolina and serves as an educational center for students and residents of multiple health care disciplines, including Family Medicine, Internal Medicine, Obstetrics/Gynecology, Psychiatry, Surgery, Dentistry, Pharmacy, Dietetics, and Behavioral Health. MAHEC's mission is to develop the workforce for a healthy North Carolina and maintains core values and principles of equity, diversity, and inclusion. MAHEC Family Health is based out of Asheville, North Carolina, a city that has been widely recognized as one of the most LGBTQ+ friendly cities in the United States.[16] Discussions to improve gender-affirming care education and practice at MAHEC began in 2018.

Trainings

Practice-wide staff and providers were invited to attend an hourlong, free training session on gender-affirming care on 3 different dates during the summer of 2019. The training sessions were facilitated by the Campaign for Southern Equality, a local nonprofit advocacy group whose mission is to promote equal rights for LGBTQ+ individuals. Two individuals from the local LGBTQ+ advocacy group who identified among the transgender and gender nonbinary community facilitated the trainings. Organizational leadership were notified

of the training sessions and encouraged to have their department members attend. Some departmental employees, including Family Medicine clinical and business office staff, were required to attend. Clinical schedules were modified as needed to accommodate attendance during the lunch hour, 12 PM to 1 PM. Invites to training sessions were also sent via e-mail. A video teleconferencing option was made available on short notice due to employee request, and virtual attendance was not taken. A sign-in sheet was provided for in-person participants at all 3 training sessions. Participants were allowed to attend more than 1 session. As the sessions were largely shaped by the participation of the audience, sessions were altered based on audience input and not fully duplicative. Due to the irregularities of the trainings, the research team decided not to use pre- or posttesting to gauge audience impact.

Those who attended in person were categorized based on their position type as clinical staff (registered nurses, certified medical assistants, and certified nursing assistants), business office personnel (scheduling and other patient-facing, nonclinical roles), administrative staff (nonpatient-facing, operational roles), education (administrative staff who work specifically with learner programs), allied health providers (behavioral health, pharmacists), and medical providers (physicians, residents, and advanced practice providers). Although medical providers were invited to attend, other educational strategies for providers were being developed. Briefly, medical providers, specifically family medicine providers, were offered a 90-minute faculty development session on providing gender-affirming care and a 60-minute grand rounds presentation on prescribing gender-affirming hormones. Two didactic lectures, 1 about terminology and 1 about prescribing gender-affirming hormones, were presented to family medicine residents. The medical provider education sessions were not assessed in this study.

The structure of each training session was similar across all 3 dates. Speakers acclimated the audience by providing foundational information about gender identity terminology. The session then consisted of primarily multiple-choice, anonymous, audience response questions. The questions asked of the participants were consistent across training sessions. The presenters assessed understanding after each question by asking for volunteers to offer an explanation or providing an explanation themselves. Some questions described similar concepts, which the presenters used to help assess retention of information.

A structured protocol for observation was developed with an experienced qualitative researcher. The structured protocol was consistent with observational research methods[17] and prompted the observer to focus on the following areas: participant interest level, topics covered, questions asked, comments made by participants and speakers, and participants' and presenters' body language. A consent statement was displayed at the beginning of each training session notifying attendees of their voluntary participation in the observational study. A pharmacy student researcher in their final year of training collected the observational data in real time at the 3 training sessions; no recording devices were used. The pharmacy student researcher strictly observed and did not participate in the training sessions. One of the experienced qualitative researchers also collected observational data at 3 of the sessions. After the observational data were collected, the pharmacy student and the qualitative expert met multiple times to ensure there was an appropriate evaluation of observational data obtained.

Once the observational data were affirmed, the consolidated data collected from all 3 training sessions was reviewed and analyzed by 3 investigators (CH, LS, IPU) to agree on key takeaways. Key takeaways were developed based on the questions and comments made by the participants and answers provided by the training session speakers. Using a content analysis framework, the questions and comments most numerously mentioned and related were considered the main key takeaways.[18] The field notes were analyzed using a hand-coding method that allowed the research team to engage with the data and track the most commonly mentioned questions and comments.[19] This process helped ensure interrater reliability among the research team. Agreement was reached among the research team that the key takeaways highlight the most prevalent factors from the training based on the rate of occurrence.

Adherence to Recommendations

A retrospective chart review was completed to assess the application of organizational recommendations for comprehensive, gender-affirming care. Adherence to recommendations was evaluated using a

comprehensive, internal TGNB care protocol that was developed by 2 faculty members using a combination of UCSF, WPATH, and Fenway transgender health guidelines. This internal protocol was available to Family Medicine faculty and residents via an online file-sharing system. Elements of comprehensive care are summarized in Table 1 and included documentation of appropriate name and gender markers in the chart; depression screening completed within the last year; appropriate monitoring for hormone therapy (ie, testosterone levels, estradiol levels, complete blood counts, metabolic panels, if applicable); assessment of family planning; indication for pre-exposure prophylaxis of HIV; preventive health screening recommendations, including need for Papanicolaou smear, mammogram, and/or bone density testing;

Table 1. Chart Review Elements for Adherence to Recommendations for Care and Criteria to Meet Recommendations

Element Reviewed	Criteria to Satisfy Recommendation	Action Taken If Criteria Not Met
Name/gender markers	Accurate gender identity, name, and/or pronouns documented	Patient identifiers updated in chart
Appropriate prescription for PrEP	Documentation of PrEP prescription for anyone who met the following criteria: AMAB who have sex with AMAB are sexually active and have 1 of the following: an HIV-infected partner; recent syphilis, gonorrhea, or chlamydia infection; or inconsistent condom use during anal sex Sexually active people who have 1 of the following: a serodiscordant sex partner, inconsistent condom use during sex with a high-risk partner of unknown HIV status, or recent syphilis or gonorrhea infection IVDU with sharing of injection paraphernalia or engagement in risky sexual activity	Message sent to provider notifying them of the action needed
Contraception/ family planning	Documentation of discussion regarding need for contraception/family planning	
Mental health	Documentation of depression screening (PHQ-2 and PHQ-9) within the past year and/or discussion regarding therapy or counseling	
Health maintenance	Papanicolaou smear per USPSTF recommendations, if the patient has a cervix Mammograms starting at age 50, per USPSTF recommendations, if patient has breast tissue Osteoporosis screening for transmasculine transgender patients at age 50 on testosterone for >10 years; otherwise starting at age 60	
Follow-up	Appointment scheduled with primary care provider	
Gender-affirming hormone therapy		
Testosterone	Absence of absolute contraindications (ESRD, acute hepatitis, pregnancy, unstable CAD, hematocrit > 55%, and active sex hormone–sensitive cancer) Relative contraindications documented and addressed (HTN, T2DM, chronic liver disease, personal or family history of CAD, PCOS, VTE, and history of sex hormone–sensitive cancer) Documentation of laboratory tests at appropriate intervals (total testosterone at 3, 6, and 12 months in year 1, then annually if stable; H/H at baseline and at 3, 6, and 12 months in year 1, then annually if stable)	Message sent to provider notifying them of the action needed
Spironolactone	Absence of contraindications (hyperkalemia, renal insufficiency) Documentation of laboratory tests at appropriate intervals (BMP at baseline, 2 to 4 weeks, 3 months, 6 months, and 12 months, then annually)	
Estrogen	Absence of absolute contraindications (ESRD, acute hepatitis, personal history of estrogen-sensitive cancer, and history of VTE with ongoing smoking) Relative contraindication documented and addressed (HTN, T2DM, chronic liver disease, smoking, migraine with aura, age > 40, obesity, CAD, personal history of VTE, and prolactinoma) Documentation of laboratory tests at appropriate intervals (estradiol at 3 and 6 months, then as needed; total testosterone at 3, 6, and 12 months, then as needed)	

Abbreviations: AMAB, assigned male at birth; BMP, basic metabolic panel; CAD, coronary artery disease; ESRD, end-stage renal disease; H/H, hemoglobin/hematocrit; HTN, hypertension; IVDU, intravenous drug user; PCOS, polycystic ovary syndrome; PHQ, patient health questionnaire; PrEP, pre-exposure prophylaxis; T2DM, type 2 diabetes mellitus; USPSTF, United States Preventive Services Task Force; VTE, venous thromboembolism.

and follow-up scheduled within 3 to 12 months as appropriate. Family planning assessment was limited to documentation of family planning discussions and did not delve into specific family planning needs of TGNB individuals. If a patient care element was not met, appropriate action was taken as described in Table 1. These discrepancies were tracked and presented as proportions of the sample. Patients of any MAHEC provider with a gender dysphoria diagnosis (ICD-10 codes F64.0, F64.1, F64.2, F64.8, or F64.9) documented in their chart as of May 1, 2020, were included. Patients were excluded if they were not assigned to a provider at MAHEC or had transferred care. Charts were reviewed from May 1, 2020, through May 31, 2020, to determine if patients were up to date on organizational recommendations as of the date of chart review. The number of visits or recentness of last visit was not collected.

This study was reviewed and deemed exempt by the Mission Hospital institutional review board.

Results

Trainings

A total of 153 employees out of 647 total employees (23.6%) attended the 3 training sessions offered on gender-affirming care in person. Clinical staff made up the majority of the employees in attendance (n = 57), followed by business office personnel (n = 29), administrative staff (n = 26), education staff (n = 19), allied health professionals (n = 13), and lastly medical providers (n = 5). Four participants attended more than 1 session. Three key takeaways from the training sessions were identified: (1) lack of knowledge or familiarity with gender terminology and expression, (2) fear of offending patients, and (3) employee hesitation to change behaviors when interacting with patients.

The first key point identified was a lack of knowledge or familiarity on gender terminology and expression among employees. Attendees asked several questions related to the differences and definitions of gender expression, identity, and gender-affirming care. One question asked by an employee was, "What is the difference between gender nonconforming and intersex?" Another question asked was about the difference between gender expression and gender identity.

The second key point consistent across the training sessions was a fear of offending patients, which caused employees to hesitate from directly asking patients their pronouns and gender identity. Specifically, when an employee was asked why they did not ask a patient their pronouns, the employee responded that they were afraid the question may be perceived as disrespectful and that they felt uncomfortable asking. As MAHEC is located in the South, 1 attendee asked a question related to the use honorifics when addressing patients. "In the South, a lot of people are taught to say 'yes ma'am' or 'no ma'am.' How do we address this?"

The last key point was employee hesitation to implement change related to gender-affirming care. Explanations for why employees showed hesitation included statements that they had a limited amount of time to interact with patients, felt uncomfortable addressing the topic of gender identity, and were self-conscious about making mistakes.

Adherence to Recommendations

Patient Characteristics

A total of 75 patient charts were identified. Ten patients were excluded because they did not have an assigned provider or had transferred care. The remaining 65 charts were reviewed for the 7 predetermined components of comprehensive transgender care, as outlined in Table 1. The majority of patients were white (81.5%). About half identified as female-to-male transgender (50.7%), 29.2% identified as male-to-female, 15.4% identified as "neutral," and 4.5% had unknown gender identities. Fifteen patients were under the age of 18 at the time charts were reviewed. Demographics are described in Table 2. Thirty-seven patients (56%) were prescribed some form of hormone therapy. Twenty-two patients were prescribed testosterone, 15 were prescribed estrogen, 13 were prescribed spironolactone, 1 was prescribed finasteride, and 7 were prescribed other therapies, including progesterone products and leuprolide.

Discrepancies

A total of 122 discrepancies with organizational recommendations were identified, with a mean of 1.88 discrepancies per patient. The most common discrepancies included the need to schedule a follow-up visit (61.5%), need for mental health screening (41.5%), need for laboratory monitoring of testosterone therapy (20%), and corrected gender markers/names listed in the appropriate place in the patient chart (16.9%). More than half of patients prescribed testosterone needed laboratory monitoring

Table 2. Adherence to Recommendations Chart Review: Baseline Demographic Characteristics (n = 65)

Characteristic	Value
Mean age, y	27.1
Race, No. (%)	
White	53 (81.5)
Unknown	9 (13.8)
Asian/American Indian	3 (4.5)
Gender identity* (n = 65), No. (%)	
Female-to-male	33 (50.7)
Male-to-female	19 (29.2)
Neutral	10 (15.4)
Unknown	3 (4.5)

*Terminology defined by the practice electronic medical record.

Table 3. Discrepancies in Care Identified in Chart Review for Adherence to Recommendations

Discrepancy	Proportion (%)
Corrected gender marker/name	11/65 (16.9)
Recommended PrEP	1/65 (1.3)
Contraception/family planning recommended	3/65 (4.6)
Needed updated mental health screen	27 (41.5)
Health maintenance: Papanicolaou smear needed	9/16 (56.3)
Health maintenance: mammogram needed	2/3 (66.7)
Health maintenance: DEXA needed	1/2 (50.0)
Needed to be scheduled for follow-up	40 (61.5)
Gender-affirming hormone therapy	
Testosterone: CI identified	0/22 (0)
Testosterone: laboratory tests needed	15/22 (68.2)
Estradiol: CI identified	1/15 (6.7)
Estradiol: laboratory tests needed	4/15 (26.7)
Androgen blocker: CI identified	0/14 (0)
Androgen blocker: laboratory tests needed	8/14 (57.1)

Abbreviations: CI, contraindication; DEXA, dual-energy radiograph absorptiometry; PrEP, pre-exposure prophylaxis.

(68.2%), whereas only about one-fourth (26.7%) prescribed estradiol needed laboratory monitoring. Of the subsets of patients who were eligible for Papanicolaou smears, mammograms, and dual-energy radiograph absorptiometry scans, 56.3%, 66.6%, and 50.0%, respectively, were due for these screenings. All discrepancies identified are summarized in Table 3.

Discussion

Trainings

Implementing a transgender health program is known to require appropriate buy-in from all staff members and should identify individuals throughout the organization to act as champions.[20] In this study, each training session was conducted with staff members practice-wide encompassing those from administrative to medical staff within a large education and health care organization. However, less than a quarter (23.6%) of all MAHEC employees attended 1 or more of the sessions in person. The low attendance may be, in part, due to a proportion of employees who may not be at work during the traditional lunch hour of 12 PM to 1 PM, such as maintenance and housekeeping staff. A large proportion of employees are also providers who had different opportunities for training. Transgender patients' concerns often arise as early as scheduling a visit when legal names and gender markers may differ from names, pronouns, and gender identities,[21] illustrating the importance of training of all staff members. Therefore, it is encouraging that clinical staff and business office personnel made up the majority of those who attended the sessions. A systematic review reported short-term improvement in knowledge, attitudes, and practice of health care students and professionals with regard to sexual and LGBTQ+specific health care after educational curricula training.[12] However, no previous research has studied training sessions that incorporate all staff in a family medicine organization. The consistent knowledge deficits present in this study demonstrate the importance and necessity of training and educational sessions to increase comfort levels in providing gender-affirming care. Further research is necessary to determine the long-term impact of these sessions on the clinical care process.

Lack of familiarity with terminology pertaining to gender-affirming care and fear of offending patients were consistent concerns raised among staff members across all training sessions. Previous research identified health care organizations as well poised to address these concerns through training and incorporation of inclusive forms and assessment within clinical workflow,[22] after finding that adequate LGBTQ+ sexual health education of emerging health care professionals is lacking. A 2011 study found that 50% of respondents reported having to teach their providers about their own health care, 28% of transgender people postponed care due to past discrimination, and 19% of

transgender people were denied care outright.[23] Recognition of the importance of affirming terminology by staff members is crucial as it is a known barrier for transgender people seeking health care. Recommendations to address these barriers include cultural competency education, training of frontline personnel to use patients' affirmed names and gender pronouns, and dedicated training to use affirming terminology.[24] Further, increasing comfort with terminology and gender-affirming care may reduce the hesitation to operationalize the training content into the clinical care process.

Adherence to Recommendations

The need for further staff and provider education was evident in the inconsistent application of organizational recommendations for comprehensive transgender care, despite well-documented best practices. Several national organizations, including the National Academy of Medicine[25] and the Centers for Disease Control and Prevention,[26] have emphasized the importance of collecting sexual orientation and gender identity information in health care settings as a necessary step to reduce disparities of LGBTQ+ individuals. However, at our practice, 11 patients (16.9%) required correction of gender markers, pronouns, or their name in the electronic health record. This problem is often amplified by limitations within the electronic health record. In the absence of designated fields, finding areas to document this information for gender-diverse individuals in a standardized way is a significant problem for medical practices. Indeed, in this study, the gender identities options for TGNB individuals were lacking, including only female-to-male, male-to-female, and "neutral."

More than half the patients in this study (57%) were prescribed hormone therapy. A substantially larger proportion of patients taking testosterone were identified as needing laboratory monitoring compared with those taking estradiol (68.2% of patients taking testosterone vs 26.7% taking estradiol). Reasons for this difference are unclear.

Interestingly, the most common discrepancies identified for patients in this study are those not specific to TGNB individuals. Arranging appropriate follow-up in clinical care as well as routine mental health screening is necessary in providing quality patient care regardless of the patient population. Systems related to variable schedules for medical residents and faculty physicians may have contributed to a falsely high representation of follow-up visits not scheduled, as sometimes practitioner schedules are not open far enough in advance for a patient to schedule visits with longer follow-up intervals. The chart review was completed within several months of the onset of the coronavirus pandemic in the United States, which likely affected scheduling of follow-up appointments as well. It is also possible that patients in this population are more likely to decline to schedule follow-up or cancel after scheduling.

A large proportion (41.5%) of patients were found not to have sufficient documentation of mental health screening. This finding is not easily explained, and referral for mental health assessment, though no longer considered a requirement by WPATH for hormone therapy for patients with stable mental health concerns,[9] is extremely important in this potentially vulnerable population. It is also unclear if this mental health screening rate is consistent with the rest of the practice population. The possibility that unconscious or conscious bias led to unequal treatment of this population cannot be eliminated. However, existing literature also supports that quality of care between TGNB individuals and the rest of the patient population did not differ.[27]

Another component of comprehensive care in which there is a known disparity between TGNB and nontrans individuals is in the recommendation and completion of routine screenings and health maintenance.[28] This small study examined appropriate screening based on UCSF recommendations.[8] Screening recommendations in this patient population can be complex. Half or more of patients eligible for Papanicolaou smears, mammograms, and dual-energy radiograph absorptiometry scans had not had them completed, indicating a need for education regarding organ-specific health maintenance screenings. Administration of an organ inventory for every patient would provide better documentation of need for screening of female reproductive organs such as Papanicolaou smears and mammograms.[29] It is also important not to overlook possible patient discomfort with examination of sex organs in the TGNB population.

This study highlighted several aspects that have been well implemented in the care of TGNB individuals, but identifying and acting to

improve on gaps in care is essential in meeting the needs of these patients in primary care practices. Therefore, it is important to increase training for medical staff and education for medical providers.

This study has several limitations. It is a small, single-center, retrospective, cross-sectional study with 2 independent study arms describing initial efforts to introduce and improve TGNB patient care. Self-selection bias likely impacted the training sessions. Although some staff were required to attend, other participants may have elected to attend out of personal interest, possibly introducing a more positive skew in the observations. In reviewing adherence to organizational recommendations, identification of patients was imperfect and relied on the documentation of an *International Classification of Diseases, 10th Revision* code that can be stigmatizing (ie, gender dysphoria) and perhaps skewed the sample population to those with more obvious mental distress. Further, patients may not want this code in their charts, and as a result, TGNB individuals may have been unintentionally excluded from this study. In addition, the assessment of adherence to recommendations may not be specific enough to unmask unique needs of TGNB individuals, such as navigating the complexities of family planning, which may not be the same as contraception for many TGNB patients. Finally, because of the small sample size, this study did not seek to identify disparities in care across different groups, including gender identity groups, race, or age.

Additional studies on the successful implementation of high-quality transgender care in primary care practices are needed to serve as a roadmap for other primary care organizations seeking to improve care provided to this population in this space. To improve care across the life span, further research on access to and completion of preventive care screenings in TGNB individuals is also warranted.

Conclusion

Organization-wide training across a large primary care organization elucidated common questions and concerns from staff and providers. More cultural and operational training is needed to optimize gender-affirming care across the institution.

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To see this article online, please go to: http://jabfm.org/content/35/2/235.full.

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