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Improving Primary Care Utilization for Transgender Patients at an FQHC

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Improving Primary Care Utilization for Transgender Patients at an FQHC

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Abstract

Background: Transgender and Gender-Nonconforming (TGNC) populations comprise approximately 6% of the U.S. population. Socially and within the medical treatment system TGNC individuals face widespread stigmatization and discrimination which negatively impacts their mental, physical, and emotional health and contributes to health disparities. Real and perceived barriers to safe and effective healthcare are worsened by the scarcity of primary care providers knowledgeable in caring for these populations

Objectives: The aim of this quality improvement project was to examine the impact of inclusive gender-affirming integration on the utilization of preventive and primary care services.

Methods: A one group pre- and post-intervention design was used to measure utilization of preventive and primary care services prior to and following integration of inclusive and affirming care. The Chi-Square Test of Associations (X^2) analysis was performed for the project aim.

Results: Results revealed a correlation between integration of inclusive and affirming services and tobacco use screening ($p<0.001$), cervical cancer screening ($p=0.022$), BMI screening ($p<0.001$), and HIV screening ($p=0.212$). Screening rates that noted a small negative correlation to integrating gender-affirming services into primary care: Depression screening ($p<0.001$; $X^2=64.518$; PHI=-0.250) and HTN screening ($p=0.240$, $X^2=1.378$, Phi=-0.036)

Conclusion: Results of this project successfully noted that four of the six preventive health screenings showed a positive association between the integration of inclusive gender-affirming services into primary care and did affect the rate at which preventive screenings were utilized by TGNC patients accessing primary care services. More significantly, the project also revealed a significant increase of TGNC patients seeking care.

Improving Primary Care Utilization for Transgender Patients at an FQHC

Background

Approximately 1.4 million or 6% of Americans identify as transgender (Flores, Herman, Gates, & Brown, 2016). The transgender population in the US is likely much higher; however, methods for collecting gender identity data are still evolving and unreliable (Hoffman, 2016). The term transgender (TG) is used to describe individuals whose internal gender identity does not align with their assigned sex at birth, whereas individuals who are cis-gender have a gender identity aligning with their birth-assigned sex. Gender non-conforming (GNC) describes individuals whose gender expression does not follow the society norms associated with the gender binary of masculinity and femininity (Selix & Rowniak, 2016). For this project TG and GNC will be referred to as TGNC.

TGNC individuals face discrimination, humiliation, and abuse at every level of their lives, including rejection and abuse from family, denial of employment, public criticism/victimization, and denial of care in medical settings. These chronic stressors negatively impact the physical, social, and emotional health of this population (Radix, Lelutiu-Weinberger, & Gamarel, 2014). For example, TGNC individuals use negative coping responses such substance abuse, including injecting drugs to manage the social and economic stress associated with transphobia (Radix et al., 2014, p. 303). The health disparities that TGNC individuals experience due to discrimination and social/internal stigmatization, also affects the ability for these individuals to seek safe and effective healthcare (Cruz, 2014). Several studies have reported that stigma influences access and healthcare utilization among vulnerable populations, gender minorities such as TGNC populations, are disproportionately impacted (Whitehead, Shaver, & Stephenson, 2016) (Radix et al., 2014) (Reisner et al., 2015). The largest transgender

study to date, the 2008-2009 National Transgender Discrimination Survey, reported that approximately 22% of gender diverse people have been refused care at healthcare facilities and 66% postponed needed care due to lack of knowledgeable healthcare providers and fear of discrimination or abuse by providers and healthcare staff (Thompson, 2016). Subsequently, TGNC individuals encounter many barriers when seeking healthcare services that lead to subpar care, including late or inadequate diagnoses of disease.

To date research regarding the morbidity and mortality rates, the utilization of primary care, and health outcomes of gender diverse populations has been limited. However, several studies have noted that TGNC populations have a higher prevalence of tobacco use, substance use, mental health issues, obesity, diabetes, heart disease, HIV, and sexually transmitted infections (STIs) than the general population (Feldman et al., 2016) (Radix et al., 2014) (Melendez & Pinto, 2009). Addressing the intersecting layers of health disparities for this population is made especially difficult given the scarcity of safe, gender-affirming, and competent care. The lack of these resources coupled with real and perceived discrimination increases this population's risk for poor health outcomes. Healthcare facilities that serve lesbian, gay, bisexual (LGB) populations may provide care to TGNC patients. However, accessing a healthcare facility that serves primarily LGBT patient populations may create yet another barrier for the gender diverse populations seeking care (Bauer, Zong, Scheim, Hammond, & Thind, 2015). One qualitative study noted that TGNC individuals often feel disconnected to the LGB community which could lead to TGNC patients not seeking care at these healthcare facilities (Melendez & Pinto, 2009). In healthcare systems that do serve TGNC patients regularly, care is segmented. For instance, patients may receive primary care at one facility, but may have to

receive gender-affirming care, such as cross-sex hormone therapy, at another facility. Segmented care increases barriers which may lead to negative health outcomes.

In addition to medical care needed to support transition, TGNC individuals have primary and preventive health care needs that are much like that of the general population. Seeking regular preventive healthcare can minimize health disparities and related costs associated with treating advanced illnesses in this population. Primary care is a well-suited option to provide the TGNC populations with holistic care that encompasses much needed preventive, primary, and transgender-related care. One way in which health disparities can be eliminated and access to care increased in this population is to integrate comprehensive care, gender-affirming care into primary care settings.

Problem Statement

The TGNC populations in the U.S. encounter many barriers such as stigma and discrimination, which diminish their access and utilization to care. These disparities are worsened by the scarcity of primary care providers knowledgeable in caring for this population.

Purpose

Using a one group pre- and post-test design, this quality improvement project conducted at Outside In, a Federally Qualified Healthcare Center (FQHC) in Portland, Oregon examined the impact of integrating transgender health services into primary care on the utilization of primary care for its TGNC population. This was achieved by looking at the rate of six preventive health screenings for TGNC patients at a federally qualified healthcare center (FQHC) and the rate of growth of this population over a four-year span.

Specific Aim

The TGNC populations are considered vulnerable and marginalized populations that require gender-affirming care related to gender dysphoria or gender incongruence experienced by TGNC patients. Gender-affirming care may encompass the following: hormone therapy, surgery, facial hair removal, interventions for voice modification, behavioral health services that may provide letters needed for surgery, and behavioral adaptions such as genital tucking, packing, or chest binding (University of California, San Francisco [UCSF], 2017, para. 1). It's important to note that not all TGNC patients will seek any or all the above-mentioned services. Providing comprehensive care to this population should include gender-affirming care coupled with primary care services that provide preventive healthcare, also known as gender-affirming primary care and should be the gold standard of care for treating all TGNC patients

The specific aim of this quality improvement project was to compare the impact to an FQHC's TGNC population prior to and after the integration of inclusive gender-affirming services into its existing primary care services from a standalone monthly transgender clinic. This was accomplished by looking at the rates of six US Preventive Services Task Force (USPTF), Center for Disease Control (CDC), and the Center for Excellence for Transgender Health recommended preventive health screenings (cervical cancer screening, depression screening, Body Mass Index (BMI) screening, HIV screening, hypertension (HTN) screening, and tobacco use screening) for all patients with a gender dysphoria/gender identity/gender incongruence/trans-male-to-female/trans female-to-male/endocrine dysfunction diagnoses and indicating a gender different than assigned sex at birth in the electronic health record (EHR). The pool of patients fitting the gender and diagnosis inclusive criteria also accessed care two

years prior to integration of gender-affirming services into primary care thru two years post integration (July 1, 2013 to June 30, 2017).

See Table 1. Identifying and Defining Variables

Project Aims

The aim of the project is to identify clinical practices and guidelines that can be enhanced through quality improvement efforts for TGNC patients accessing healthcare at Outside In. In particular, this project aims to identify areas of improvement related to rates of cervical cancer screening, depression screening, BMI, HTN, HIV, and tobacco use screening among transgender and gender non-conforming people receiving care at Outside In.

Significance

With the implementation of the Affordable Care Act of 2010, which banned sex discrimination in healthcare facilities that received Federal funding, and the increased visibility of transgender narratives in mainstream media - TGNC populations have gained greater social acceptance (Selix & Rowniak, 2016). Still unclear, is the extent to which the healthcare needs of TGNC populations are unmet (Roberts & Fantz, 2014).

Nurses and Advanced Practice Nurses (APNs) are well suited to champion the rights of the most vulnerable populations. The American Nurses Association (ANA) notes in its Code of Ethics that a nurse's practice must be carried out with respect, integrity, and with an eye in preserving the dignity of every person (ANA, 2017). Nurses are responsible for advancing the practice of nursing by utilizing evidence-based research in the development of professional standards of care (ANA, 2017). It is this unique training and perspective that will improve the health outcomes and advance the research needed to alleviate the health disparities of the TGNC populations (Biederman & Hines, 2016). As noted previously, TGNC health research is

desperately lacking in all areas. This project will expand the state of the science in TGNC health, inform primary care practice changes, guide development of standards for health promotion and gender affirming care, and improve the health outcomes for TGNC individuals.

Literature Review

The estimated TGNC populations in the U.S. is approximately 0.3% to 0.5%, however this estimate may be lower than true numbers due to inadequacies in the collection of demographic data of these populations (Sedlak, Veney, & O'Bryan Doheny, 2016). Gender diverse individuals experience many barriers to quality healthcare, including social and institutional stigma, discrimination, and being refused healthcare because of their gender identity. Collectively, these structural barriers have created systemic avoidance of mainstream healthcare (Poteat, German, & Kerrigan, 2013).

Fear of discrimination from the healthcare community is a commonly reported barrier to healthcare seeking in TGNC people. In a cross-sectional study of gender-affirming services conducted in Canada, 83.1% of 433 gender diverse patients surveyed reported feeling uncomfortable discussing TG related issues with their family practice provider (Bauer, et al., 2015). Provider attitude, lack of knowledge about TG healthcare, and ambivalence towards TGNC individuals have been reported as additional barriers to care (Bauer et al., 2015; Jaffee, Shires, & Stroumsa, 2016; & Whitehead et al., 2016).

Clinical uncertainty and ambivalence regarding care of TG individuals have also been reported in studies that examined the medical providers' perspective. A grounded theory study that specifically examined stigma within the context of healthcare interactions, revealed that providers lack the requisite medical training, and thus certainty, that is needed to provide comprehensive care n TG people (Poteat et al., 2013). Medical provider uncertainty coupled with

internalized stigma in the TGNC patient, shifts the power in the patient-provider relationship in favor of the provider (Poteat et al., 2013). This power shift may increase the patient's feelings of discrimination and stigmatization and discourage them from accessing healthcare. Feelings of uncertainty and ambivalence are not unique to medical providers. For instance, other studies have revealed that support staff may respond in similarly discriminatory fashion (Lindroth, 2016). Ensuring that providers and support staff have appropriate education in TG health and cultural humility/diversity is a critical step in facilitating safe and affirming care for gender diverse individuals and decreasing the re-traumatization that occurs when TGNC patients seek healthcare.

Prior studies have shown that the health care needs for TGNC patients far exceed that of cross-sex hormone therapy (Selix & Rowniak, 2016). For example, a study conducted in the Canadian health system revealed that despite facing some discomfort in discussing trans health issues, most gender-affirming care is being performed at the family practice level (Bauer et al., 2015). Additionally, most experts in TG health note that the bulk of transgender health related services, including cross-sex hormone therapy, can be successfully managed within a primary care setting (Wylie et al., 2016). Mainstreaming TG specific needs into primary care provides an opportunity to expand TGNC's access to comprehensive care, including preventive care and chronic disease management (Selix & Rowniak, 2016). Primary care providers (PCP) are well suited for managing the increased health disparities experienced by gender diverse populations. For instance, PCPs can manage hormone therapy and facilitate referrals to specialty services (Bauer et al., 2015). Despite this potential, PCPs and other medical staff, lack the education and training needed to provide competent care to this population.

There is some empirical evidence which suggests that TGNC people prefer bundled care services, e.g. “one-stop shopping,” receiving care at the community health clinic instead of the LGBT clinic; and prefer accessing care at an affirming and safe environment (Melendez & Pinto, 2009). However, studies on the effectiveness of providing care to gender diverse populations in primary, specialty, and mental health care settings are limited. More work needs to be done to ensure that primary care practices can provide a safe and affirming place for TGNC individuals to receive quality and patient-centered care.

Theoretical Foundation

The Minority Stress Theory (MST) provides an organizing lens for this study. MST, is an expansion of the Social Stress Theory, describing a relationship between minority and dominant values and the conflict that results within the social environment and experienced by minority groups (Meyer, 2013, p. 4). The MST’s underlying assumptions: Stress is unique among stigmatized individuals, is chronic due to the social and cultural structures in place, and is socially based due to ingrained social processes, institutions, and structures (Meyer, 2013, p. 4). Myer further narrows the focus of the MST to describe minority stress processes in the sexual and gender minority populations. Meyer’s MST identifies experiences of prejudices, rejections, concealment of sexual/gender minority status, and internalized homophobia/transphobia stigmatization as indicators of poor mental and physical health outcomes (Tebbe & Moradi, 2016). Thus, the MST provides a framework for understanding how removal of structural barriers within healthcare institutions through the adoption and integration of inclusive gender-affirming care into a primary care clinic influences the uptake of primary medical services among transgender patients at Outside In.

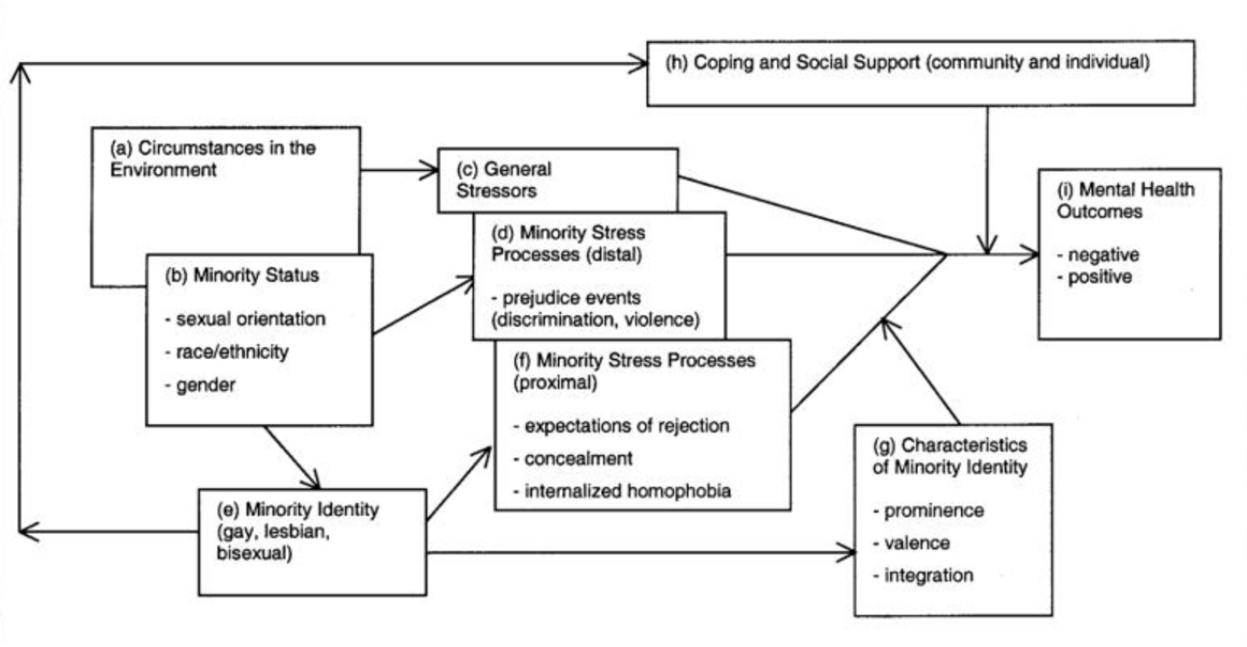

Figure 1. Minority stress processes in lesbian, gay, and bisexual populations (Meyer, 2013).

The MST provided the foundation for this study, which aimed to examine utilization of primary care and gender-affirming services in an inclusive and safe environment among TGNC individuals

Methods

Research Design and Population:

This Quality Improvement project used a one group pre- and post-intervention design. In the one group, pre- and post-test design, subjects are selected (TGNC patients at Outside In), a manipulation is introduced (implementation of inclusive care), and the behavior or dependent variable (screening rates) is measured. The project looked at the impact of primary care utilization of TGNC patients prior to and following the integration of the Transgender Clinic into Primary Care Clinical Services on July 1, 2015 at Outside In, a Federally Qualified Health Center (FQHC). Data was collected retrospectively from two EHRs. This project looked at data

collected from the GE Centricity system from July 1, 2013 to June 5, 2015 and data collected from OCHIN Epic system from June 6, 2015 to June 30, 2017.

This project design enabled the researcher to complete the project, which had a limited time scope, and the number of patient encounters was pre-determined within the EHR.

Included in this quality improvement project were patients who: were 18 years of age or older, had a medical appointment with a medical provider at Outside In least once from July 1, 2015 to June 30, 2017, and who had any of the following diagnostic codes:

- ICD-9 codes (256.39, 257.2, 259.9, 302.0, 302.3, 302.5, 302.50-53, 302.85, 302.89, 302.9, 309.9, 752.7)
- ICD-10 codes (E28.39, E29.1, E34.9, E43.20, E52.9, F64, F64.0, F64.1, F64.8, F64.9, F65.1, F65.81, F66, Q56.3, Q56.4, Z87.890)
- Modifier codes 45 and/or kx, a gender (M, F, FtoM, MtoF, and Other) that differs from birth sex.

See Table 2. Inclusive Codes for a definition of ICD-9/ICD-10codes.

Setting:

The project was conducted at Outside In, a Federally Qualified Health Clinic (FQHC) located in downtown Portland, Oregon or at one of the clinic's mobile medical vans. All EHRs from July 1, 2013 to June 30, 2017 of patients who met the inclusive criteria were examined.

Instrumentation/Measurements:

Data were abstracted retrospectively from two EHRs, GE Centricity and OCHIN Epic. Four data abstraction tools were utilized to collect data:

1) **Structured Query Language (SQL):** SQL is the computer standard language that is used to store, manipulate, and query data. It is the standard language that is used to abstract data from

Relational Database Management Systems (RDMS), such as EHRs (SQL, 2017). This reporting tool was used to abstract data from the GE Centricity platform.

2) **Crystal Reports:** A business intelligence application that is used to design and generate reports from a wide range of data sources ("Crystal Reports", 2017). The application supports effective selection and linkage of tables in RDMS. This data abstraction tool was specifically used to abstract data from the GE Centricity platform.

3) Business Objects Report Tools: A reporting deployment platform that provides reporting, data visualization, and predictive analytics (http:www.autimatic.com/busines-objects-reporting.com).

4) A data abstraction tool was specifically used to abstract data from OCHIN, an offsite database operated by OCHIN and connected to Outside In's OCHIN Epic EHR. See Appendix for the data collection tool-also name your tool.

Data Collection Procedures and Timeline:

Data was collected from OCHIN Epic's EHR database by the members of the Data & Reporting team at Outside In. Prior to data abstraction, a coding manual which served as a reference tool for both data abstractors was developed.

Two expert data abstractors collected data from the EHRs. Additional training in data reporting was not required for this project. To reduce bias, only the researcher had knowledge of and access to the purpose and aim of this project

Data Analysis Plan

SPSS 25 was utilized to store and analyze all data.

- Data was downloaded from Excel to SPSS 25 by the researcher.
- Descriptive statistics was performed on categorical variables and frequency and percentage are reported.

- The Chi-Square Test of Associations (X^2) analysis was performed for the project aim - identify areas of improvement related to rates of cervical cancer screening, depression screening, BMI Screening, HTN screening, HIV screening, and tobacco use screening among transgender and gender non-conforming people receiving care at Outside In.

Ethical Considerations

Data for this project was abstracted and stored onsite at Outside In. All data was stored on Outside In's server under a password-protected file; only the researcher had access to the password. All EHR charts included in the study were assigned a unique identifying number. Identifying patient information (Names, medical record numbers) were then cross-referenced with the unique identifier and kept separately from the abstracted data in a separate password protected file on Outside In's server. De-identified data will be maintained for a minimum three years to allow time for dissemination of work and publications. After three years the IT team will delete all data collected from the chart. All Outside In staff who participated in the abstraction and review of data completed HIPAA training at Outside In and were aware of confidentiality requirements in working with patient data.

Results

Patient Population

A total of 1,035 TGNC patients, representative of the entire TGNC identified patients served at Outside In over a four-year span and who met the inclusive criteria, were included in this project. The most significant change noted in the demographic data was an increase from 175 (17%) TGNC patients meeting the inclusive criteria to 860 (83%) TGNC patients who met the inclusive criteria of this project. This increase represents a 66% increase of TGNC patents who met the

inclusive criteria of this study and who received care at Outside In after integrating gender-affirming health services into primary care services.

See Table 3. Population Characteristics Pre- and Post-Integration.

Birth-Sex & Gender Identity

Results also revealed an increase of patients who were biologically male (5.5%) and a decrease (5.5%) in biologically female patients post-integration of services. Patients choosing to use non-binary pronouns (They/Them) also increased (8.9%) while the male binary pronoun saw a decrease (16.8%) post-integration of services.

Age

The largest age group observed was 20-29 years. Post-integration TGNC patients 18-19 years of age decreased by 5% while patients in the 30-39 age group increased by 5%.

Race/Ethnicity

White/Caucasian Non-Hispanic TGNC patients meeting inclusive criteria for this project saw an increase from 199 (68%) patients pre-integration to 650 (76%) patients post-integration. Asian TGNC patients meeting inclusive criteria for this project saw an increase from 3 (2%) patients pre-integration to 68 (8%) patients post-integration.

Insurance Status

Insurance status saw a dramatic change post-integration most likely related to Oregon laws enacted January 1, 2015 that allowed coverage for cross-sex hormone therapy, gender reassignment surgery, and puberty suppression for individuals suffering from gender dysphoria (Oregon Health Authority [OHA], 2015). Changes to insurance status noted a decrease (17.6%) in uninsured/self-pay and an overall increase (16.7%) in Medicaid (7.0%), Medicare (3.6%), and private insurance (6.1%). See Table 3, Population Characteristics Pre-and Post-integration.

Preventive Health Screenings:

A Chi-Square Test of Association (significance level = 0.05) was performed to determine if a relationship existed between the independent variable of gender-affirming services integrated into primary care and the dependent variables representing preventive health screenings (cervical cancer, depression, BMI, HTN, HIV, and tobacco use screenings).

See Table 4. Chi-Square Test Pre/Post Integration vs. Preventive Health Screenings.

Results indicated that a strong correlation existed between integration and tobacco use screening ($p<0.001$). Of the 860 patients who met inclusive criteria and accessed care after integration (July 1, 2015), 831 (96.6%) were screened for tobacco use as compared to 52 (29.9%) patients screened for tobacco use prior to integration. This positive association was confirmed by a large Chi-Square value ($X^2=519.639$) and a high strength of association (Phi = 0.709). A similar result was noted with cervical cancer screening ($p=0.022$). Of the 485 patients who met inclusive criteria and were biologically a female at birth, 142 (35.9%) received a Papanicolaou (PAP) test for cervical cancer screening after integration. Pre-integration noted only 21 (23.3%) patients out of 90 receiving a Pap test prior to integration. The positive association was confirmed by a Chi-Square value ($X^2=5.229$) and a positive strength of association (Phi= 0.104).

Depression screening ($p<0.001$) results noted a lower (54.3%) screening rate post-integration than in those patients who accessed care pre-integration (86.9%). This negative correlation of depression screening and the integration of gender-affirming services in primary

care is further evident by a negative statistical association (Phi = -0.250), but with a $p<0.001$ and a moderate Chi-Square value (64.518).

HIV Screening noted a slight increase (37.6%) in screening rates post-integration as compared to screening rates (32.6%) prior to integration. The Chi value ($X^2=1.566$) indicates a slight degree of association which is also noted in the Phi (Phi=0.39) and probability ($p(0.212) < \alpha(0.05)$) of obtaining a similar affect and speak to a positive correlation between integration and improved health screenings.

BMI Screening, much like Tobacco use screening, showed a significant increase (95.7%) post-integration as compared to pre-integration BMI screening results (1.1%). The Chi value ($X^2=803.802$), a p value ($p<0.001$), and a Phi (0.881) all confirm the significant correlation between improvement in preventive health screenings and utilization of primary care resources when inclusive services are integrated into primary care.

HTN screening, much like depression screening, showed a slight decrease (95.1%) post-integration as compared to screening rates pre-integration (97.1%). The probability value ($p=0.240$) remains less than the set significant level (α) of 0.05. A negative Phi (-0.036) and a small Chi test value ($X^2=1.378$) indicate a negative correlation of HTN screenings and integration.

Discussion

The goal of this project was to examine preventive healthcare screenings before and after integration of inclusive gender-affirming services into primary care. Findings from this project will be used to identify clinical practices and guidelines that can be enhanced through quality improvement efforts for the TGNC population accessing healthcare at Outside In. The agency has served and supported the TGNC and other vulnerable populations throughout its long tenure

within the medical and social service communities in the Portland, Oregon area. The decision to end the well-established "Trans-Clinic" and move the gender-affirming services into primary care was an operational decision and not a decision made from a quality improvement lens

Prior to the integration of gender-affirming services into primary care, a plan was developed to educate medical providers, provide support and training to support and frontline staff. Medical providers from the local community held trainings and provided consulting for medical providers uncomfortable with caring for TGNC patients. Trans 101 trainings were provided to the entire clinic staff from local community partners and Outside In's Transgender Coordinator. Medical Assistants and Nursing staff received specific trainings from Outside In's trans-identified medical assistants and the Transgender Coordinator. These trainings were specifically geared towards understanding sources of trauma TGNC patients may experience in the exam room and during medical procedures. What wasn't done prior to and after integration was a plan to circle back, after-integration, to determine if integration was successful and how Outside In could improve health outcomes and services for the TGNC patient population. This project is the first look at the effects of the integration in terms of how Outside In's TGNC patients are utilizing primary care services by comparing the rates of preventive health screenings.

A significant change, noted soon after integration took place, was a sharp increase in the number of new TGNC patients accessing care at Outside In. The integration and the improved effort to provide inclusive care to all patients opened access to important healthcare for a population riddled with health disparities. Findings from this project confirm that integration of TGNC services into primary care can increase the volume of TGNC patients seeking primary care, thus improving access for this population.

Other questions to answer regarding the integration: Are TGNC patients utilizing primary care services and how can Outside In improve care and positively effect health outcomes? The project started out defining the utilization of primary care services by looking at preventive health screening rates. The screenings chosen were the top screenings that were noted to be important to Outside In primary care providers: cervical cancer, tobacco use, and depression screenings. In obtaining the screening data, HIV, BMI, and HTN screenings data was also obtained thus included as measures in this project.

BMI screening rates were the most remarkable with increase (95.7%) post-integration as compared to pre-integration (1.1%). BMI calculations require both a height and a weight. With such a large range being reported, it is possible that the GE Centricity system did not calculate BMI if a height isn't input at the time of the visit with the weight. For instance, if the height used for the visit was a previously recorded height, the BMI would not have been recorded. All patients, both cis-gender and TGNC, should be screened for BMI. An elevated BMI is a risk factor for the development of cardiovascular disease (CVD) and/or diabetes (Schmidt & Rizzolo, 2017).

Ensuring that TGNC patients are routinely screened for tobacco use is a critical first step in linking patients to tobacco cessation programs. Butchting et al., noted several recent studies have reported that TGNC tobacco use rates are often higher than rates noted in the LGB and Cis-gendered populations, with Trans-women (TW) having even higher rates than Trans-men(TM) (Buchting et al., 2017). The importance of tobacco use screening and follow-up is increasingly important in TGNC patients who choose to access cross-sex hormone therapy, especially for TW. Studies monitoring TW have noted the occurrence of venous thromboembolism with the use of estrogen therapy (Meyers & Safer, 2017). Data from this project noted a significant

increase in tobacco use screening post-integration (96.6%) as compared to pre-integration (29.7%). What could not be determined from the data, however, is the percentage of patients reported tobacco use and the percentage that were referred to smoking cessation programs. Tobacco use screening and follow-up is a quality measurement that is actively being monitored not only at Outside In, but also at the Federal and State levels. At the Federal level, the agencies are: Centers for Medicare & Medicaid Services (CMS), Health Resources & Safety Administration (HRSA), National HIV & AIDS Bureau, and the National Committee for Quality Assurance (NCQA). At the State level: Accountable Care and Coordinated Care Organizations, and State Health Departments or Departments of Human Services.

Not only is it important to ensure patients are provided support and education regarding tobacco use, this measure is one that is often a source of revenue for improved outcomes. Outside In participates in a quality improvement incentive program sponsored by the Coordinated Care Organizations (CCOs) that oversee Medicaid. This program requires a quarterly 3% improvement on pre-selected clinical quality measures (CQMs). Meeting the improvement benchmarks would mean a pre-determined per member per month (PMPM) rate for all Medicaid patients assigned to Outside In, whether they are engaged in care or not. Meeting these benchmarks can mean a sizable incentive every month. An assumption can be made that the large increase in screening rates occurring post-integration was due to robust workflows and mindfulness towards this quality metric from administration down to the medical assistants. This may not have been a source of focus for "Trans-Clinic" providers and staff.

The cervical cancer screening rates noted post-integration (35.9%) as compared to the screening rates pre-integration (23.3%) was higher than expected. Outside In has long struggled with moving cervical cancer screening rates for cis-gender women to the 40% mark and beyond.

Several different workflows have been attempted to change this quality metric. However, the needle rarely moves with this CQM. Recently, Outside In is stepping up the outreach to patients by using volunteers to contact patients via phone or through the patient portal, MyChart, in order to schedule a preventive screening appointment which would include a PAP test.

A cervical cancer screening rate of 36% for our TM population mirrors Outside In's current cervical cancer screening rates for the cis-gender women at Outside In. Prior studies have reported significantly lower cervical cancer screening rates among TM when compared to other sexual-minority (lesbians) and cis-gender women. One study noted that FTM patients had a 37% lower screening rate than that of non-FTM patients (Peitzmeier, Khullar, Reisner, & Potter, 2014). Findings from our study suggests that creating a welcoming, safe, and inclusive environment may have a positive impact on improved healthcare utilization of TGNC patients, including cervical cancer screenings in trans-male patients.

A systematic review of HIV prevalence and risk factors of transgender persons in the US found that TGNC populations have higher rates of HIV infection and engage in high levels of risky behavior (Herbst et al., 2008). HIV screening rates at Outside In increased slightly post-integration. It's difficult to determine if there is a strong association between increased HIV screening and inclusive, gender-affirming services being integrated into primary care. Given the increased risk for TGNC populations, further quality improvement efforts are recommended.

The two areas of notable surprise were depression screening and HTN screening results. Like Tobacco use screening, these are areas that are tracked and are often tied to a revenue source if quality metrics improve. Given that TGNC populations have an increased risk for mental health issues and suicidality – it will be important to work on improving workflows for both metrics to improve health outcomes for this population.

The overall results of this quality improvement project successfully noted that four of the six preventive health screenings showed a positive association between the integration of inclusive gender-affirming services into primary care and did affect the rate at which preventive screenings were utilized by TGNC patients accessing primary care services at Outside In. More significantly, the project also revealed an impressive uptake in access for TGNC patients. The overall success not only provided valuable information on the successful results and processes in place, but also pointed to areas such as improving depression screening rates, HTN screening rates, and ensuring that Outside In is maximizing its efficiency in promoting the health and well-being of its TGNC populations.

Study Limitations

Findings must be considered within the context of the study's limitations. First, this QI project used a single, study site. Therefore, findings from this study may not be generalized or relevant to other FQHCs. Moreover, by design, QI projects do not control for extraneous variables and cannot establish cause and effect relationships (Shirey et al., 2011). Therefore, one cannot accurately conclude that changes in screening rates were due to the policy changes at the clinic.

Despite these limitations, other FQHCs and primary care sites may benefit from knowledge gained and lessons learned at Outside In because of this project. Additionally, findings from this project can be used to inform QI efforts and future research opportunities.

Implications/Recommendations for Practice, Policy, and Research

Implications and recommendations for the TGNC population on a large scale should begin with improved training of our current and future medical providers, frontline staff, support staff, and lawmakers. Altering medical curriculum to include education on sexual and gender minorities, the effects of stigmatization of marginalized populations on health outcomes, and the

importance of social determinants of health. Ensuring that medical providers, specifically primary care medical providers, are knowledgeable in gender-affirming healthcare and issues affecting the TGNC population will aid in improving provider-patient relationships Thus, decreasing the barriers to accessing healthcare based on fear of discrimination and increasing access to safe and quality care.

Lawmakers and leaders within communities and governments should work on incentivizing primary care healthcare facilities and providers for providing safe and gender-affirming services within primary care based on improvement on quality metrics that are inclusive to TGNC patients. Often community health clinics, rural clinics, and FQHCs receive incentives and funding sources to specifically improve health outcomes for certain populations (diabetics, high emergency department utilizers, homeless, etc). Providing incentives would provide an opportunity for increased access to primary care practices that would be providing inclusive care.

A large barrier to on-going research for the TGNC population is the inability to collect accurate and meaningful data. Lawmakers community leaders, and leaders in healthcare should ensure that government and community surveys include questions inclusive to the TGNC populations. Healthcare systems should also incorporate appropriate fields on applications and within registration fields to assist in accurately identifying members of the TGNC populations.

Research for the TGNC population is important as the state of the science in this area is still emerging and the amount of research available is minimal. Increasing research on the effects of trauma and stigmatization/discrimination of this population will shed light on the TGNC population and help inform our understanding of disparities seen in other marginalized populations.

Findings from this project will help inform quality improvement initiatives in other clinics and health facilities that serve TGNC populations. Findings from this project will also help inform future larger scale projects and research studies for TGNC populations.

Conclusion

As noted previously, the TGNC populations are one of the most marginalized populations in the U.S. They endure significant barriers to housing, employment, education, and healthcare. The multiple layers of stigmatization faced by this population create negative psychosocial conditions that result in adverse health outcomes and exposure to chronic physiological stress (White, Reisner, & Pachankis, 2015). Sustained stress levels in individuals have immediate negative effects on the body and can compromise health over time (White, Reisner, & Pachankis, 2015). For instance, chronic stress can lead to obesity, diabetes, hypertension, anxiety, depression, and suicidality. Multiple layers of stigma and discrimination further exacerbate these conditions by causing TGNC people to delay or avoid healthcare, adds to their distrust of the medical system, and creates social conditions which lead to risk-taking behaviors and poor health.

The aim of the project was to identify clinical practices and guidelines that can be enhanced through quality improvement efforts for the TGNC populations accessing primary care at an FQHC. The success of this project is a first step in addressing barriers related to stigmatization/discrimination by providing a safe and inclusive environment that supports the TGNC population in achieving improved health.

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Tables

Table 1. Identifying and Defining Variables

Variables	Theoretical Definition	Operational Definition
Integration of Transgender gender-affirming services into primary care services.	Moving longstanding transgender clinic and integrating all gender-affirming services into primary care.	Gender-affirming care: • Hormone services • Referrals for surgery letters • Referrals for surgical services
Utilization of primary care services	TGNC patients utilizing preventive health services.	Comparing the following: • DOS • ICD9/10 codes • Chief complaint
Preventive Health services accessed	TGNC patients utilizing preventive health services.	Comparing rates of preventive health services: • Cervical CA screenings o PAP • Tobacco use screening • Depression screening o PHQ2 o PHQ9
Demographic		
Patients 18+	Adult patients	Age 18+
Sex at Birth	Birth Sex	Male, Female, Other in registration
Ethnicity	Field in EHR	
Race	Field in EHR	
Gender Identification	Field in EHR	
Preferred Pronoun	Annotated in EHR	
Insurance Status	Verified	

Table 2. Inclusive Billing Codes and Descriptive Definition

Inclusive Codes	Code Description
ICD-9	
256.39	Other ovarian failure
257.2	Other testicular hypofunction
259.9	Unspecified endocrine disorder
302.0	Sexual & gender identity disorders
302.3	Transvestic fetishism
302.5	Trans-sexualism
302.50	Trans-sexualism with unspecified sexual history
302.51	Trans-sexualism with a sexual history
302.52	Trans-sexualim with homosexual history
302.53	Trans-sexualism with heterosexual history
302.85	Gender identity disorder in adolescents or adults
302.89	Other specified psychosexual disorders
302.9	Unspecified psychosexual disorder
309.9	Unspecified adjustment reaction
752.7	Indeterminate sex and pseudohermaphrodism
ICD-10	
E28.39	Other primary ovarian failure
E29.1	Testicular hypofunction
E34.9	Endocrine disorder, unspecified
F43.20	Adjustment disorder, unspecified
F52.9	Psychosexual dysfunction unspecified
F64.0	Transsexualism
F64.1	Dual-role transvestism
F64.8	Other gender identity disorder

F64.9	Gender identity disorder, unspecified
F65.1	Transvestic fetishism
F65.81	Other specified psychosexual disorders
F66	Other sexual disorders
Q56.3	Pseudohermaphroditism, unspecified
Q56.4	Indeterminate sex, unspecified
Z87.890	Personal history of sex reassignment
Modifiers	
45	Ambiguous Gender Category Claim indicates patient had ambiguous gender characteristics - transgendered or hermaphrodite (Department of Health & Human Services [DHHS], 2009, p. 13)
KX	Modifier used with procedure codes that are gender specific when patient is transgender, ambiguous genitalia, or hermaphrodite patients.

Table 3. Population Characteristics Pre- and Post-integration

Population Characteristics		Total Population N=1035	Pre-integration N=175	Post-Integration N=860
Birth Sex	Male	550(53.1%)	85 (48.6%)	465 (54.1%)
	Female	485 (46.9%)	90 (51.4%)	395 (45.9%)
Gender Identity	MTF	514 (49.7%)	76 (43.4%)	438 (50.9%)
	FTM	420 (40.6%)	73 (41.7%)	347 (40.3%)
	Other	101 (9.8%)	26 (14.9%)	75 (8.7%)
Preferred Pronoun	He/Him	342 (33.0%)	82 (46.9%)	260 (30.2%)
	She/Her	438 (42.3%)	70 (40.0%)	368 (42.8%)
	They/Them	124 (12.0%)	8 (4.6%)	116 (13.5%)
	Unknown	131 (12.7%)	15 (8.6%)	116 (13.5%)
Age	18-19	46 (4.4%)	15 (8.6%)	31 (3.6%)
	20-29	617 (60.0%)	102 (58.3%)	515 (59.9%)
	30-39	250 (24.2%)	35 (20%)	215 (25.0%)
	40-49	78 (7.5%)	16 (9.1%)	62 (7.2%)
	50-59	30 (2.9%)	5 (2.9%)	25 (2.9%)
	60+	14 (1.4%)	2 (1.1%)	12 (1.4%)
Race	White/Caucasian	769 (74.3%)	119 (68.0%)	650 (75.6%
	Black/African	38 (3.7%)	7 (4.0%)	31 (3.6%)
	Asian	22 (2.1%)	3 (1.7%)	68 (7.9%)
	American Ind/Alaskan Native	23 (2.2%)	4 (2.3%)	19 (2.2%)
	Native Hawaiian	2 (0.2%)	1 (0.6%)	1 (0.1%)
	Pacific Islander	5 (0.5%)	1 (0.6%	4 (0.5%)
	Multiracial	80 (7.7%)	12 (6.9%)	68 (7.9%)
	Other	23 (2.2%)	23 (13.1%)	0 (0.0%)
	Unknown	73 (7.1%)	5 (2.9%)	68 (7.9%)
Ethnicity	Non-Hispanic	842 (81.4%)	134 (76.6%)	708 (82.3%)
	Hispanic	139 (13.4%)	28 (16.0%)	111 (12.9%
	Unknown	54 (5.2%)	13 (7.4%)	41 (4.8%)
Insurance	Medicaid	498 (48.1%)	74 (42.3%)	424 (49.3%)
	Medicare	31 (3.0%)	0 (0,0%)	31 (3.6%)
	Private Ins	82 (7.9%)	5 (2.9%)	77 (9.0%)
	Self-Pay	411 (39.7%)	95 (54.3%)	316 (36.7%)
	Unknown	13 (1.3%)	1 (0.6%)	12 (1.4%)

Table 4. Chi-Square Test Pre/Post Integration vs. Preventive Health Screenings

Tobacco/Depression Screening Variables		Pre-integration N=175	Post-Integration N=860	Analysis: X^2 p=0.xxx df Phi
Tobacco Screening	Freq (%)	Yes = 52 (29.7%) No = 123 (70.3%)	Yes = 831 (96.6%) No = 29 (3.4%)	X^2 = 519.639 p<0.001 df = 1 Phi = 0.709
Depression Screening	Freq (%)	Yes = 152 (86.9%) No = 23 (13.1%)	Yes = 466 (54.3%) No = 394 (45.8%)	X^2 = 519.639 p<0.001 df = 1 Phi = -0.250
HIV Screening	Freq (%)	Yes = 57 (32.6%) No = 118 (67.4%)	Yes = 323 (37.6%) No = 537 (62.4%)	X^2 = 1.566 p=0.212 df = 1 Phi = 0.39
BMI Screening	Freq (%)	Yes = 2 (1.1%) No = 173 (98.9%)	Yes = 823 (95.7%) No = 37 (4.3%)	X^2 = 803.802 p<0.001 df = 1 Phi = 0.881
HTN Screening	Freq (%)	Yes = 170 (97.1%) No = 5 (2.9%)	Yes = 818 (95.1%) No = 42 (4.9%)	X^2 = 1.378 p=0.240 df = 1 Phi = -0.036
Cervical Cancer Screening Variable N= 485		Pre-Integration N = 90	Post-Integration N = 395	Analysis: X^2 p=0.xxx df Phi
PAP Test	Freq (%)	Yes = 21 (23.3%) N = 69 (76.7%)	Yes = 163 (35.9)%) N = 322 (64-1%)	X^2 = 5.229 p = 0.022 df = 1 Phi = 0.104
Cervical Cancer screening data/analysis only acounts for patients who were biologically female at birth and have not undergone a hysterectomy.				