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SPECIAL SECTION

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Philip A. Chan, MD, MS

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Cover image: The Rhode Island Department of Health (RIDOH) Sexual Orientation and Gender Identity (SOGI) Equity Work Group. https://health.ri.gov/health-equity/sogi-equity

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Introduction: Addressing the Health of Lesbian, Gay, Bisexual, Transgender and Queer (LGBTQ+) People in Rhode Island

PHILIP A. CHAN, MD, MS; C. KELLY SMITH, MSW; THOMAS BERTRAND, MPH; JASON R. RAFFERTY, MD

KEYWORDS: LGBTQ+ Health; MSM; HIV; Substance Use; Mental Health

Lesbian, gay, bisexual, transgender, and queer (LGBTQ+) individuals in the United States represent diverse populations that face distinct health challenges related to minority stress associated with sexual orientation and gender identity. Although LGBTQ+ individuals are often considered as a single group, this term includes a diverse number of subgroups, each with separate health considerations. Sexual orientation refers to a person's romantic or sexual attraction to other people (i.e., heterosexual, gay/lesbian, bisexual, etc.). Gender identity refers to a person's inner sense of self as male, female, having elements of both, or none of these. Gender may be the same as the sex assigned at birth (i.e., cisgender) or may be different (i.e., transgender). LGBTQ+ individuals experience health disparities across a spectrum of diseases and conditions, including mental health, substance use, sexual health (i.e., HIV and other sexually transmitted infections [STIs]), cancer and chronic diseases [**Figure 1**]. Many of these disparities are linked with societal attitudes toward LGBTQ+ individuals and the barriers to care they often create. Understanding these disparities and the specific health needs of the LGBTQ+ community is the first step in addressing and implementing approaches to mitigate them.

LGBTQ+ individuals have much higher rates of mental health diagnoses compared to non-LGBTQ+ individuals. In a study of over 400,000 individuals, LGBTQ+ individuals had higher odds of depression (Adjusted Odds Ratio [AOR] 2.11), bipolar disorder (AOR 1.87–2.35), post-traumatic stress disorder (PTSD, AOR 2.77–3.67), attention-deficit/hyperactivity disorder (ADHD, AOR 2.19), and personality disorder (AOR 2.71) compared to non-LGBTQ+ populations.[1] In addition, transgender individuals are at 19x higher risk of dying by suicide than the general population, and 20–40% of transgender people have attempted suicide in their lifetime.[2] Tobacco, cannabis, and heavy alcohol use is also markedly elevated in the LGBTQ+ populations, which exacerbates mental health and chronic disease risks.[3] Certain populations such as gay, bisexual, and other men who have sex with men (MSM) report substance use at much higher rates than non-MSM populations (i.e., stimulant use).[4] The use of stimulants and specifically methamphetamine is well known to increase the risk of acquiring HIV and other sexually transmitted infections. MSM are much more likely to be diagnosed with HIV than non-MSM.[5]

LGBTQ+ individuals may also have higher rates of chronic diseases, including cancer, chronic respiratory diseases,

Figure 1. Characterizing LGBTQ+ Health Disparities in the United States

Mental Health	Substance Use	HIV/STIs	Cancer	Chronic Disease
The odds of mental health illness are 2-3x higher in LGBTQ+ individuals including depression, bipolar disorder, PTSD, ADHD, etc. (Anderson et al., 2025)	Tobacco, cannabis, and heavy alcohol use is significantly elevated among LGBTQ+ populations (Schuler et al., 2020).	Men who have sex with men have a 1 in 6 lifetime risk of HIV compared to heterosexual men who have a 1 in 524 risk (Hess et al., 2017).	Men who have sex with men are less likely to be screened for prostate cancer compared to heterosexual men (Herriges et al., 2022).	LGBTQ+ individuals have higher odd of chronic diseases including diabetes, renal disease and cardiovascular disease (Pinnamaneni et al., 2022).
Transgender individuals are at 19x higher risk of dying by suicide than the general population; 20-40% of transgender people have attempted suicide in their lifetime (Wolford et al., 2017).	LGBTQ+ individuals have higher rates of substance use than other groups. For example, gay men have 2-4x higher odds of past-year stimulant use (Rosner et al., 2021).	Men who have sex with men are at much higher risk of bacterial STIs including syphilis and gonorrhea than the general population (Werner et al., 2018).	Lesbian and bisexual women are less likely to be screened for cervical and breast cancer than heterosexual women (Agenor et al., 2022; Herriges et al., 2022).	Lesbian and bisexual women are more likely to have higher rates of obesity and other chronic diseases (Gonzales et al., 2017).

diabetes, obesity, renal disease, and cardiovascular disease among others.[6] Among a survey of almost 65,000 LGBTQ+ individuals, this group had higher odds of being diagnosed with diabetes (17% higher), renal disease (31% higher), hypertension (8% higher), cardiovascular disease (14% higher), and stroke (24% higher) compared to non-LGBTQ+ individuals.[6] In terms of cancer, MSM are less likely to be screened for prostate cancer compared to heterosexual men.[7] Lesbian and bisexual women are less likely to be screened for cervical and breast cancer than heterosexual women.[7,8] These and other health conditions highlight the significant disparities that exist between LGBTQ+ and non-LGBTQ+ individuals. Improved clinical and public health approaches are needed to improve health outcomes among the LGBTQ+ community.

There are many mechanisms which lead to health disparities faced by LGBTQ+ individuals compared to heterosexual and cisgender populations.[9] "Minority stress" refers to the social stress faced specifically by LGBTQ+ individuals due to discrimination and stigmatized social status (relative to non-LGBTQ+ populations).[10] These factors contribute to a stress response in the body that drives both physical and mental health disparities. LGBTQ+ individuals are much more likely to experience discrimination and report mistreatment when seeking medical care compared to non-LGBTQ+ individuals. For example, LGBTQ+ adults are twice as likely as non-LGBTQ+ adults to report negative experiences while receiving health care in the last three years, including being treated unfairly or with disrespect (33% versus 15%) and having at least one of several other negative experiences with a medical provider (61% versus 31%), including a provider assuming something about them without asking, suggesting they were personally to blame for a health problem, ignoring a direct request or question, or refusing to prescribe needed pain medication.[11] LGBTQ+ individuals are more likely to be socially isolated and have fewer economic and legal supports, which can also lead to reduced healthcare access and higher rates of disparities. In general, LGBTQ+ individuals are more likely to lack healthcare access, delay medical care, and be nonadherent to medications.[6]

Improving the health and wellness of LGBTQ+ communities requires interventions at multiple levels.[12] At the clinic-level, healthcare staff and organizations need to be welcoming and affirming. Staff should ask about, document, and try to use correct pronouns. Medical records should systematically document sexual orientation and gender identity to ensure patient's identities are respected and to help guide clinical decision-making. Healthcare staff should be aware of disparities as well as important health topics related to LGBTQ+ communities. For example, medical providers who care for sexually active MSM should discuss pre-exposure prophylaxis (PrEP) to prevent HIV, and also doxycycline post-exposure prophylaxis (DoxyPEP) to prevent bacterial STIs. LGBTQ+ individuals should be screened for mental health illness and substance use. Healthcare staff should also be aware of other social determinants of health (e.g., higher rates of unemployment, unstable housing, sexual assault, etc.) that may also contribute to delays in seeking healthcare.

In addition to clinic- and organization-level approaches, policy-level interventions are an important consideration to address LGBTQ+ health. Importantly, there were more than 500 anti-LGBTQ+ bills across 42 states in 2024, many of which increase stigma and discrimination related to LGBTQ+ health.[13] On January 20, 2025, the White House released an executive order entitled, "Defending Women from Gender Ideology Extremism and Restoring Biological Truth to the Federal Government." This executive order has been part of a broader government approach to target transgender people and limit funding (including healthcare payments) to organizations which recognize and study gender identity as a legitimate demographic descriptor. This and other attacks on LGBTQ+ individuals only serve to further marginalize and stigmatize these groups which already experience significant disparities in health. By contrast, legislation is also being passed in some states to facilitate LGBTQ+ care. For example, "Shield Laws" including here in Rhode Island seek to protect medical providers who provide LGBTQ+ care from civil or criminal suits from other states.[14]

Rhode Island has been fortunate to have many state and community-based organizations lead efforts to advance the health and safety of LGBTQ+ communities through a mix of policy, programmatic, and clinical initiatives. Blue Cross Blue Shield of Rhode Island has a "Safe Zone" designation which indicates clinics that provide a safe, affirming, and welcoming environment for all people (www.bcbsri.com/safezones). Several clinics in Rhode Island are known to provide culturally-competent LGBTQ+ health programs in the state, including Thundermist Health Center, Open Door Health, Planned Parenthood and Brown University Health. Other community-based organizations such as the Rhode Island Health Schools Coalition have developed a sexual and reproductive health app (www.righttoknowapp.com) for teens that includes special topics for LGTBQ+ adolescents. Numerous other community-based organizations in the state work to provide services and programs related to LGBTQ+ health. In addition, the Rhode Island Department of Health and other state agencies have supported LGBTQ+ health equity and partner with numerous organizations, including healthcare clinics to provide services to support LGBTQ+ health. One example is the creation of the "PrEP Champions Network" at the health department to increase access to PrEP services for LGBTQ+ individuals. By tapping into the strong infrastructure of clinical and community partnerships to address LGBTQ+ health, Rhode Island ranked first in the nation for two-dose Mpox vaccinations during 2022. Although more needs to be done, these and other examples highlight the dedicated efforts to date to improve LGBTQ+ health in our state.

In conclusion, LGBTQ+ individuals face numerous disparities related to mental health, substance use, sexual health, and chronic diseases. Healthcare professionals in Rhode Island should be aware of these disparities and strive to provide welcoming, culturally-competent care to individuals who identify as part of the LGBTQ+ community. Medical providers should be aware of evidence-based health interventions which are specifically recommended for LGBTQ+ individuals. Systems-level approaches, including legislation, should focus on facilitating the health and wellness of LGBTQ+ individuals, and not promulgating laws and regulations which only serve to further marginalize and stigmatize these populations.

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Implementing Behavioral Health Services at a Community-Based LGBTQ+ Clinic

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ABSTRACT

INTRODUCTION: Lesbian, gay, bisexual, transgender, and queer (LGBTQ+) individuals face significantly more behavioral health disease burden than their heterosexual counterparts. Improved access to behavioral health services is urgently needed. We describe developing and implementing a comprehensive integrated behavioral health (IBH) program at a community-based clinic in Rhode Island, where primary care, behavioral health, and psychiatric providers work in a coordinated setting to support patients' whole health.

METHODS: We reviewed demographic and clinic data from 2023 to 2025 of an IBH program at Open Door Health in Providence, Rhode Island. We compared implementation outcomes between Year 1 and Year 2 of the program.

RESULTS: During the two-year study period, N=2,914 behavioral health visits were conducted among N=684 unique adult patients (N=212 in Year 1; N=548 in Year 2). The average patient age was 34.8 years (range: 18-77 years). Among these patients, 70.2% identified as White, 13.7% as Black/African American, 15.9% as Hispanic/Latino, 41.81% as transgender/gender diverse/nonbinary, and 81.4% as LGBTQ+. Patient volume increased 200% in Year 2 compared to Year 1 (723 versus 2,191 visits). LGBTQ+ patients utilized a greater volume of IBH services, with 20.11% having five or more visits compared to 10.2% of non-LGBTQ+ patients.

CONCLUSION: IBH services increased dramatically year over year. Offering behavioral health services during primary care visits at a community-based LGBTQ+ clinic resulted in significant uptake of behavioral health services for patients who might not otherwise have access to these services.

KEYWORDS: LGBTQ+ Health; Integrated Behavioral Health; Mental Health; Primary Care; Implementation

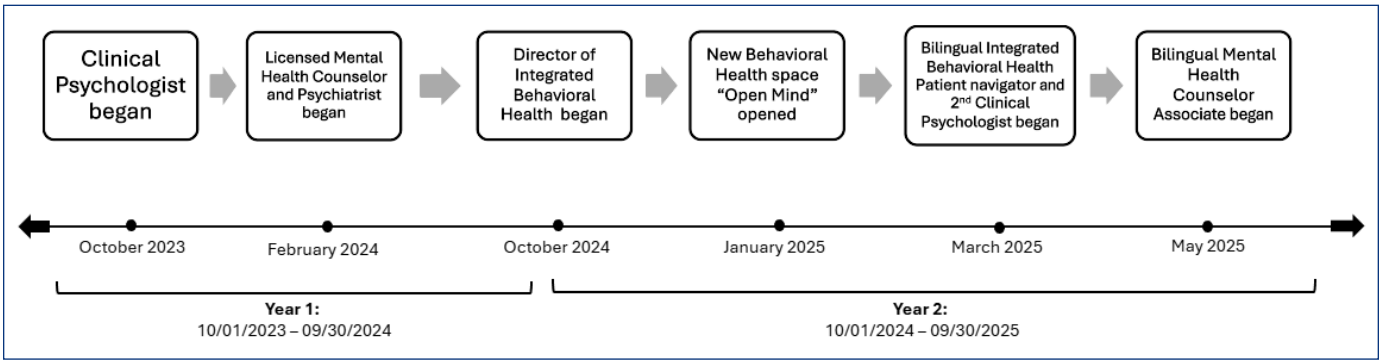
INTRODUCTION

In the United States, lesbian, gay, bisexual, transgender, and queer (LGBTQ+) individuals are disproportionately affected by mental health conditions compared to their non-LGBTQ+ counterparts. A 2025 national study of more than 430,000 adults found that cisgender sexual minority men had significantly higher odds of being diagnosed with multiple psychiatric diagnoses compared to cisgender heterosexual men, including elevated odds of anxiety (adjusted odds ratio [AOR] 1.64), depression (AOR 1.86), bipolar disorder (AOR 1.87), obsessive-compulsive disorder (AOR 1.56), and five other major mental health conditions.[1] Another cross-sectional analysis of adults in the United States found that sexual minority respondents screened positive for depression and anxiety at approximately four times the rate of heterosexual respondents, with roughly half of sexual minority adults meeting GAD-7 or PHQ-9 criteria for depression or anxiety.[2] The mental health burden is particularly acute among transgender and gender non-conforming individuals. One study found that transgender individuals were at 19-fold greater risk of dying by suicide than the general population,[3] and more recent data suggest that 82% of transgender individuals have considered suicide and 40% have made at least one lifetime attempt.[4]

The elevated mental health burden in LGBTQ+ populations is further exacerbated by increased substance use. LGBTQ+ adults in the United States report substantially higher prevalence of tobacco use (27.4% vs. 18.4% among heterosexual adults) and cannabis use (40.8–42.9% among gay and bisexual men vs. 23.9% among heterosexual men).[5,6] Illicit stimulant use, including methamphetamine, is also more prevalent among men who have sex with men (MSM) compared to non-MSM populations,[7] with important public health implications given methamphetamine's role as a risk factor for HIV acquisition. Persistent methamphetamine use among gay and bisexual men has been associated with a 14% incidence of HIV seroconversion over 12 months, corresponding to a four- to seven-fold increase in HIV acquisition odds compared to men without persistent use.[8] Sexual minority women also use alcohol at higher rates than their heterosexual counterparts; one study found that lesbian women were approximately seven times more likely, and bisexual women nearly 6.5 times more likely, than heterosexual women to meet clinical criteria for alcohol dependence.[9]

Access to affirming, culturally tailored behavioral health services is challenging for many LGBTQ+ individuals. Although 67% report needing mental health care compared

Figure 1. Integrated Behavioral Health Program Expansion Timeline (October 2023–May 2025)



Timeline depicts key programmatic milestones across a two-year implementation period from October 2023 to May 2025.

to 39% of non-LGBTQ+ individuals, fewer than half of LGBTQ+ individuals actually receive it.[10] Some of the most commonly cited structural barriers for accessing behavioral health services include long wait times, insurance limitations, and fear of discrimination or stigma. Forty-two percent of individuals report delays exceeding a month for appointments and 8% of LGBTQ+ individuals and 22% of transgender individuals avoid care altogether.[10] These challenges reveal the growing demand for novel approaches to address barriers to accessing behavioral health care among LGBTQ+ populations.

One effective approach to addressing this burden is offering integrated behavioral health (IBH) services in primary care settings. IBH refers to a healthcare model in which primary care, behavioral health, and psychiatric providers work together in a coordinated and integrated setting.[11] The model incorporates universal behavioral health screening, in which all patients are systematically assessed for mental and behavioral health conditions and substance use disorders at each visit using validated, standardized tools. Patients who screen positive are then offered a referral to behavioral health providers for further evaluation and treatment. Additionally, the IBH model enables primary care providers to directly refer patients internally to IBH services, enabling "warm handoffs," which refer to internal referrals within a care team for same day access to consultations, therapy, or psychiatric support without external referrals. The goal is to provide comprehensive and cohesive care through seamless internal referrals, shared communication between care teams, and recurring measurement-based assessments to monitor and manage behavioral health conditions.

Previous studies demonstrate that IBH services can significantly improve behavioral health outcomes. For example, one IBH program in Louisiana reported significant improvements in depression and anxiety.[12] Another large healthcare system in North Carolina found that after implementing an IBH model, approximately half of the patients with mood disorders achieved a 50% reduction in depression and anxiety symptoms, and an 82% reduction or elimination of suicidal thoughts.[13] Similarly, the American Medical Association depicted a medical practice where 60% of PHQ-9 scores and 63% of GAD-7 scores decreased by half within six months.[14] Given these demonstrated benefits, primary care clinics serving populations with higher behavioral health needs, such as LGBTQ+ communities, are well-positioned to implement such evidence-based IBH models.

Open Door Health is a community-based LGBTQ+ clinic in Providence, Rhode Island, established in 2020 as an initiative of the Rhode Island Public Health Institute (RIPHI). Open Door Health is a non-profit clinic that provides affirming and accessible primary care to all persons, and offers specialty services for LGBTQ+ individuals. The clinic provides comprehensive primary care, sexual health services, gender-affirming medical care, HIV prevention and treatment, and behavioral health services. In response to overwhelming demand for behavioral health services among its LGBTQ+ patient population, Open Door Health launched an IBH program in 2023 [**Figure 1**]. This analysis describes outcomes from the first two years of the program's implementation.

METHODS

This study was a descriptive, retrospective analysis of IBH services implemented at Open Door Health, a community-based LGBTQ+ primary care and sexual health clinic in Providence, Rhode Island. We reviewed electronic medical records across two time periods: Year 1 (October 1, 2023 to September 30, 2024) and Year 2 (October 1, 2024 to September 30, 2025). We assessed demographic information and service utilization for all patients accessing IBH services during the study period, including the frequency and types of behavioral health visits provided by various providers. Behavioral health visits were categorized as triage visits (initial assessment visits) or other behavioral health visits (follow-up and treatment visits for psychotherapy or psychiatry). Visit frequency was compared between LGBTQ+ and non-LGBTQ+ individuals, categorizing visits as 1, 2, 3, 4, or 5 or more visits per patient during the evaluation period. Finally, frequencies and percentages were used to assess changes in behavioral health service utilization across Year 1 and Year 2. Retrospective review of medical records was approved by the Brown University Institutional Review Board.

RESULTS

During the two-year study period (Year 1 and Year 2), a total of N=2,914 behavioral health visits were conducted among N=684 unique adult patients (N=212 in Year 1 and N=548 in Year 2). The average patient age was 34.8 years (range: 18–77 years). Demographic characteristics of the population included: N=480 patients (70.2%) identified as White, N=94 (13.7%) as Black or African American, N=109 (15.9%) as Hispanic or Latino, N=286 (41.8%) as transgender, gender diverse, or nonbinary, and N=557 (81.4%) as LGBTQ+. Approximately half the sample (326, 47.66%) had private insurance. Detailed demographic characteristics of all unique patients receiving integrated behavioral health services are presented in **Table 1**.

Table 1. Demographic Characteristics of Patients Receiving Integrated Behavioral Health Services (N=687)

Age group: Mean: 34.8 (Range: 18–77)	N	%
Race		
White	480	70.18%
Black/African American	94	13.74%
Other race	52	7.60%
Asian	30	4.39%
Patient Declined	17	2.49%
American Indian/Alaska Native	11	1.61%
Ethnicity		
Not Hispanic or Latino	553	80.85%
Hispanic/Latino	109	15.94%
Patient Declined	21	3.07%
Not recorded	1	0.15%
Gender Category		
Cisgender Man	245	35.82%
Cisgender Woman	115	16.81%
Genderqueer/Gender non-conforming	126	18.42%
Transgender Woman	85	12.43%
Transgender Man	75	10.96%
Choose not to disclose	28	4.09%
Unable to determine	10	1.46%
LGBTQ+ Identity		
LGBTQ	557	81.43%
Not LGBTQ	127	18.57%
Sexual Orientation		
Lesbian, gay, or homosexual	242	35.38%
Something else	156	22.81%
Bisexual	104	15.20%
Straight or heterosexual	101	14.77%
Choose not to disclose	65	9.50%
Don't know	16	2.34%
Insurance Type		
Private	326	47.66%
Medicaid (MMP)	267	39.04%
Self-pay	54	7.89%
Medicare	30	4.39%
Other	7	1.02%

Demographic characteristics of 687 unique adult patients receiving integrated behavioral health services at Open Door Health (2023–2025). Values are N (% of total, N+684)

Year 1 included a total of N=723 behavioral health visits, comprising 91 triage visits and 632 other behavioral health visits. Year 2 demonstrated substantial growth to N=2,191 total visits, including 423 triage visits and 1,768 other behavioral health visits, representing a 200% increase in visit volume from Year 1 to Year 2. The increase in visit volume reflected programmatic expansion during the study period [**Figure 1**]. Year 1 included the addition of one clinical psychologist, one licensed mental health counselor (LMHC), and one psychiatrist. Year 2 expansion included the appointment of a Director of Integrated Behavioral Health Services, a new clinical venue for service provision called "Open Mind," which refers to a dedicated space for LGBTQ+-competent mental health care in a private and secure setting connected to the main Open Door Health facility. We also added bilingual patient navigation services, a second clinical psychologist, and a bilingual mental health counselor associate (MHCa).

LGBTQ+ patients demonstrated higher engagement in IBH services with repeat visits compared to non-LGBTQ+ patients. Among LGBTQ+ patients, 44.7% had one visit, 21.18% had two visits, and 20.11% had five or more visits during the study period. In contrast, non-LGBTQ+ patients more frequently had single visits (59.84%), with only 10.24% having five or more visits, indicating greater treatment engagement among LGBTQ+ patients receiving IBH services [**Table 2**].

Table 2. Behavioral Health Visit Frequency by LGBTQ+ Status (N=684)

Number of Barriers	LGBTQ		Non-LGBTQ	
	N	%	N	%
1	249	44.70%	76	59.84%
2	118	21.18%	30	23.62%
3	51	9.16%	4	3.15%
4	27	4.85%	4	3.15%
5+	112	20.11%	13	10.24%
Total	**557**	**100.00%**	**127**	**100.00%**

Number and percentage of unique patients by number of visits during two-year IBH program (2023-2025). LGBTQ+ patients: n=557; non-LGBTQ+ patients: n=127. Percentages sum to 100% within groups.

DISCUSSION

This analysis represents among the first descriptions of implementation of IBH services at a community-based LGBTQ+ primary care clinic in Rhode Island. Previous studies have documented the effectiveness of the IBH model in improving key behavioral health indicators, such as anxiety, depression, and substance use. This study adds to the literature by demonstrating the feasibility and success of IBH implementation in a community clinic setting.

Over the two-year study period, our IBH program showed significant growth, evidenced by increased patient visits, clinical staff expansion, and effective engagement with historically marginalized populations. The program evolved from a primary care service with one licensed mental health psychologist to a comprehensive, culturally tailored IBH program supporting patients at every care stage [**Figure 1**], from patient navigator consultations through long- and short-term psychiatric and psychotherapy services. Year 1 added a clinical psychologist, LMHC, and psychiatrist. Year 2 brought a Director of Integrated Behavioral Health Services, the dedicated "Open Mind" LGBTQ+-competent space, a bilingual patient navigator, a second clinical psychologist, and a bilingual LMHC. The 200% increase in patient volume from Year 1 to Year 2 (723 to 2,191) reflects both demand for behavioral health services among the LGBTQ+ community and the effectiveness of our strategic expansion.

Previous studies have documented the effectiveness of the IBH model in improving key behavioral health indicators, such as anxiety, depression, and substance use.[15-17] This study adds to the literature by demonstrating the feasibility and success of IBH implementation in a community clinic setting. LGBTQ+ individuals experience well-documented mental health challenges and unmet needs due to stigma, economic vulnerabilities, and lack of affirming services.[18-23] Integrating IBH services within primary care removes barriers common among LGBTQ+ individuals and present in traditional siloed systems, where differing EMRs, billing, and care teams lead to lost referrals and poor follow-up. Embedding behavioral health providers facilitates clearer communication with primary care via shared EMRs and enables timely same-team referrals. This aligns with prior literature showing improved screening, diagnosis, and treatment when mental health providers share clinical information and streamlined workflows.

In support of this model, we hired an IBH patient navigator to conduct initial consultations, review screening data, perform intakes for flagged patients, and facilitate warm handoffs to internal or external services. Navigators reduce key barriers, including bridging primary care and behavioral health, managing appointments, and navigating insurance.[24-26] These roles prove especially valuable for LGBTQ+ patients wary of unvetted specialty mental health. Similarly critical was Year 2's appointment of a Director of Integrated Behavioral Health Services [**Figure 1**], whose leadership drove staffing expansion, billing integration, and the "Open Mind" dedicated space, ensuring clinical scalability and the 200% volume growth.

IBH models improve engagement, with 75% of patients achieving diagnosis and treatment initiation within 6 months versus less than 25% in fragmented systems.[27] These effects prove even stronger for stigmatized LGBTQ+ individuals who often delay care.[28,29] Affirming, integrated settings eliminate the need to navigate unknown specialty systems. We intentionally hired bilingual and LGBTQ+-identifying staff to foster patient-provider trust, yielding a diverse cohort: 81.4% LGBTQ+ (41.9% transgender/gender diverse) with substantial Black/African American and Hispanic/Latino representation. These results show that providers who reflect patients' identities help overcome access barriers, advancing equity for marginalized groups. LGBTQ+ patients showed higher repeat visit rates (20.11% with five or more visits) than non-LGBTQ+ patients (10.2%), suggesting affirming integrated care sustains engagement. Evidence confirms culturally competent care boosts retention among LGBTQ+ populations.[30-33] Together, these findings position LGBTQ+-affirming IBH as a promising solution to care disengagement.

This study has several limitations. This study was conducted at a single primary care clinic, which limits the generalizability of these findings to regions of the country that may be more restrictive of LGBTQ+ focused or culturally tailored services. Additionally, although this study included service utilization frequency, it did not include standardized clinical measurements such as GAD-7 or PHQ-9 scores. This limits our ability to determine whether the IBH model improved clinical outcomes compared to traditional healthcare approaches. Finally, our two-year study period during the investment in IBH program development represents an early implementation phase, and as such, longer-term follow-up would be needed to assess program sustainability and success beyond the initial growth period. Despite these limitations, this work provides important preliminary evidence that integrated behavioral health delivery within LGBTQ+-affirming primary care is feasible and effective at reaching and engaging marginalized populations in Rhode Island.

In conclusion, implementing an IBH program at a community-based LGBTQ+ clinic resulted in significant uptake of services over a two year period. There's a public health opportunity to enhance access and uptake of behavioral health services by integrating them with primary care.

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Anal Cancer Screening Rates Among Gay, Bisexual, and Other Men Who Have Sex With Men and Transgender Women Presenting for Services at a Community-Based Clinic

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ABSTRACT

PURPOSE: To evaluate anal cancer screening rates among men who have sex with men (MSM), transgender women (TGW), and people living with HIV (PLWH) at a community-based lesbian, gay, bisexual, transgender, and queer (LGBTQ+) clinic.

METHODS: We reviewed anal cancer screening rates from April 2023 to April 2025 among MSM, TGW and PLWH receiving care at an LGBTQ+ clinic in Providence, Rhode Island. Bivariate analyses and logistic regression were used to explore factors associated with anal cancer screening.

RESULTS: A total of N=302 individuals were eligible for anal cancer screening based on clinical guidelines during the evaluation period. Anal cancer screening was performed in 14.2% of eligible individuals, with 6.3% reporting abnormal results. In the multivariate analysis, after adjusting for age, race, and ethnicity, being a PLWH was associated with anal cancer screening (OR: 2.60; 95% CI: 1.31-5.52). A total of N=17 individuals had a high-resolution anoscopy performed (N=9 with atypical squamous cells of undetermined significance and N=8 with low-grade squamous intraepithelial lesions on cytology). Of those with anoscopy performed, 59% had abnormal pathology (N=4 Anal intraepithelial neoplasia [AIN] stage 1; N=4 AIN2; N=2 AIN3). No individuals were diagnosed with anal cancer.

CONCLUSION: Improved efforts are needed to screen at-risk populations for anal cancer in community settings.

KEYWORDS: Anal cancer screening; Men who have sex with men; Transgender women; HIV and LGBTQ+

INTRODUCTION

In 2023, there were nearly 10,000 anal cancer cases diagnosed in the United States (US).[1] Anal cancer disproportionately impacts select subpopulations in the US, including people living with HIV, particularly gay, bisexual, and other men who have sex with men (MSM), and transgender women (TGW). Although the overall cases in the general population are low, MSM and TGW have a substantially higher risk of developing anal cancer, primarily due to human papillomavirus (HPV) infection and other risk factors associated with sexual behavior.[2] The incidence rate of anal cancer is 85 per 100,000 person-years for HIV-positive MSM and 19 per 100,000 for HIV-negative MSM.[3] Among HIV-negative MSM, anal cancer incidence increases significantly with age, reaching 34 cases per 100,000 men at age 60 years or older. This compares to HIV-negative heterosexual men who have sex with women (MSW), where the incidence is fewer than 3 cases per 100,000 men at all ages.

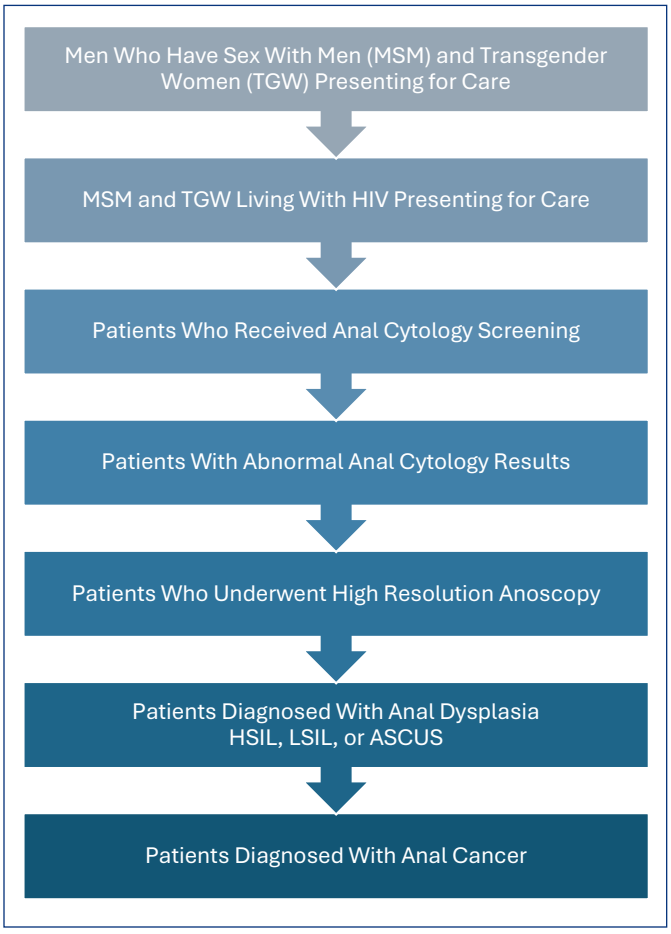
Screening for anal cancer is the first step in addressing the burden of anal cancer among sexual and gender minority populations, including MSM and TGW. The International Anal Neoplasia Society (IANS) released updated clinical guidelines in 2024 regarding anal cancer screening. Guidelines state that screening initiation at age 35 years is recommended for MSM and TGW living with HIV. For other people living with HIV and for men who have sex with men and transgender women without HIV, screening initiation at age 45 years is recommended. Data on screening rates are limited, and existing studies suggest that anal cancer screening among men who have sex with men and transgender women remains low. Less than 50% of MSM have had anal cancer screening, and rates are far lower among Black/African American men. For individuals with anal dysplasia, including high-grade intraepithelial lesions (HSIL), further intervention is warranted with high-resolution anoscopy and targeted interventions to reduce anal cancer.

The goal of this study was to evaluate baseline rates of anal cancer screening and subsequent anoscopy in MSM and TGW with anal dysplasia at a lesbian, gay, bisexual, transgender, and queer (LGBTQ+) clinic, in order to identify gaps in services and guide subsequent efforts to improve anal cancer screening and treatment rates.

METHODS

We reviewed demographic and behavioral data from April 2023 to April 2025 on all patients receiving primary care at Open Door Health, a community-based LGBTQ+ clinic in Providence, Rhode Island. In addition, we reviewed patients who received anal cancer screening and had subsequent high-resolution anoscopy. Open Door Health provides care to over 7,000 patients, the majority of whom identify as LGBTQ+. This clinic provided a unique setting and opportunity to evaluate anal cancer screening among MSM and TGW. We developed a cascade to characterize screening

Figure 1. HSIL indicates high-grade squamous intraepithelial lesions. LSIL indicates low-grade squamous intraepithelial lesions. ASCUS indicates atypical squamous cells of undetermined significance.



opportunities and patient progression through this process. This "Anal Health Cascade" represents key points in patient engagement with anal cancer screening, from initial presentation for care through diagnostic evaluation and detection of anal dysplasia or cancer [**Figure 1**].

Bivariate analyses were conducted to examine differences in characteristics between individuals who received anal cancer screening and those who did not. Chi-square tests were used for categorical variables, and the Kruskal-Wallis test was used for continuous variables. Fisher's exact test was applied to variables with zero-cell counts or small cell sizes (N<5). To assess factors associated with receipt of anal cancer screening, we performed logistic regression analyses. First, bivariate logistic regression models were fitted for each independent variable. Then, a multivariable logistic regression model was constructed, adjusting for age, race, and ethnicity. Adjusted odds ratios (aORs) and 95% confidence intervals (CIs) were reported. Exact logistic regression was used when needed to account for sparse data and zero-cell counts. Review of deidentified data was approved by the local institutional review board.

Table 1. Participant Demographics by Receipt of Anal Cancer Screening

Variable	Receiving anal pap test			p-value
	No (%)	Yes (%)	Total (%)	
Age (Median, Interquartile range)	54 (48, 60)	55 (45, 61)	54 (47, 60)	0.75
Race				
White	188 (74.90%)	34 (82.93%)	222 (76.03%)	0.359
Black	31 (12.35%)	2 (4.88%)	33 (11.30%)	
Other	32 (12.75%)	5 (12.20%)	37 (12.67%)	
Missing	8	2	10	
Assigned Sex at Birth				0.375*
Male	247 (95.74%)	43 (100.00%)	290 (96.35%)	
Female	11 (4.26%)	0 (0.00%)	11 (3.65%)	
Missing	1	0	1	
Ethnicity				
Non-Hispanic	217 (87.85%)	36 (83.72%)	253 (87.24%)	0.453
Hispanic	30 (12.15%)	7 (16.28%)	37 (12.76%)	
Missing	12	0	12	
PLWH				
No	182 (70.27%)	22 (51.16%)	204 (67.55%)	0.013
Yes	77 (29.73%)	21 (48.84%)	98 (32.45%)	
Missing	0	0	0	
MSM				
MSM/TGW	212 (85.83%)	36 (83.72%)	248 (85.52%)	0.717
Heterosexual	35 (14.17%)	7 (16.28%)	42 (14.48%)	
Missing	12	0	12	

*Fisher exact test for p-value

RESULTS

A total of 302 individuals were included. **Table 1** presents the bivariate analyses comparing demographics and anal cancer screening. The median age was 54 years (IQR: 47–60). Most participants were assigned male at birth (96.4%), and 3.6% were female. The majority identified as White (76.0%) and non-Hispanic (87.2%). Nearly one-third (32.5%) were living with HIV. Among participants with complete sexual behavior data (N=290), 85.5% identified as MSM or TGW, and 14.5% as heterosexual.

Anal cancer screening was performed in 14.2% of individuals, with 6.3% reporting abnormal results. A total of N=17 individuals had a high-resolution anoscopy performed (N=9 with ASCUS and N=8 with LSIL on cytology). Of those with high-resolution anoscopy performed, 59% had abnormal pathology (N=4 Anal intraepithelial neoplasia [AIN] stage 1; N=4 AIN2; N=2 AIN3). No individuals were diagnosed with anal cancer.

There were no significant differences in age (p = 0.75), race (p = 0.359), or ethnicity (p = 0.453) by anal cancer screening.

Table 2. Factors Associated with Anal Cancer Screening

Variables	Crude odds ratio (95% confidence interval)	Adjusted odds ratio (95% CI)*
Age	0.98 (0.95, 1.02)	—
Assigned sex at birth		
Male	ref	
Female	0.38 (0, 2.39)#	
Race		
White	ref	
Black	0.36 (0.08, 1.56)	
Other	0.86 (0.31, 2.37)	
Ethnicity		
No	ref	
Yes	1.41 (0.57, 3.44)	
Being MSM/TGW		
MSM/TGW	ref	ref
Heterosexual men	1.18 (0.49, 2.85)	1.17 (0.45, 3.06)
Living with HIV		
No	ref	ref
Yes	2.26 (1.17,4.34)	2.69 (1.31, 5.52)

*Adjusted for age, race, and ethnicity
#exact logistic regression to account for sparse data and zero-cell counts

Although no females received anal cancer screening, statistical significance was not observed due to the small sample size (p = 0.375), while Fisher's exact test was used to account for having no people in the category. Individuals living with HIV were significantly more likely to receive anal cancer screening than those not living with HIV (48.8% vs. 29.7%; p = 0.013). Being MSM/TGW was not associated with a higher likelihood of receiving anal cancer screening (p = 0.717).

In multivariable logistic regression analyses adjusted for age, race, and ethnicity, individuals living with HIV had significantly higher odds of receiving anal cancer screening compared to those not living with HIV (adjusted OR: 2.60; 95% CI: 1.31–5.52). Assigned sex at birth, race, ethnicity, and sexual behavior (MSM/TGW vs. heterosexual men) were not significantly associated with anal cancer screening. Although none of the female participants received screening, this association did not reach statistical significance after adjusting for sparse data using exact logistic regression. [See **Table 2**]

DISCUSSION

Despite important need for anal cancer screening in this LGBTQ+ population, few individuals were screened for services. High-resolution anoscopy was performed in the majority of people with abnormal anal cytology. This is among the few studies to evaluate anal cancer screening rates in populations that are at higher risk of anal cancer, including MSM, TGW, and PLWH. Given accumulating data and release of clinical guidelines in 2024, anal cancer screening in these populations is warranted. Despite this, we found that anal cancer screening rates are low in LGBTQ+ populations. In those that did have anal cancer screening performed, the rates of abnormal results were high. Fortunately, no anal cancer was found in our population, although the overall number of patients was low. These data suggest that significant efforts are needed to implement anal cancer screening in clinical settings focused on LGBTQ+ populations.

Anal cancer screening is an acceptable practice among those at higher risk of anal cancer.[8-10] However, awareness of the importance of anal cancer screening is low.[9-13] Most studies of anal cancer screening have been conducted at academic HIV clinics.[10,14] Consistent with these results and others,[15,16] our study found low anal cancer screening rates despite strong institutional support for the program, likely due to the need to prioritize other timely health issues and the fact that guidelines are more recent.[14] These results suggest that improved efforts are needed to both increase anal cancer screening and subsequent follow-up high-resolution anoscopy in patients with abnormal results. In contrast to other studies among patients with abnormal findings,[15] follow-up anoscopy was high in patients reporting abnormal anal cytology on screening. Onsite high-resolution anoscopy services at our clinic may have facilitated these high rates.

There were several limitations of our study. The study was performed at a single site, which may limit generalizability. Our study focused only on populations aged 35 years and older given clinical recommendations and that existing studies do not recommend screening under this age.[17] All data reviewed was part of clinic medical records. However, patients could have had clinical care outside of the clinic that may have been missed during the review process, which would have underestimated anal cancer screening rates. Despite these limitations, these data characterize gaps in anal cancer screening among higher-risk populations.

In summary, improved efforts are needed to increase anal cancer screening rates among MSM, TGW, and PLWH at this LGBTQ+ clinic. Numerous implementation questions remain related to anal cancer screening, including cost-effectiveness and optimal approaches to screening.[18,19] New screening guidelines present a public health opportunity to expand anal cancer screening at LGBTQ+ clinics. Our experience demonstrates that staff training and institutional commitment is necessary to expand anal cancer and anoscopy at busy community clinics. However, our baseline data suggests this is feasible, and screening policies identify patients at high risk for developing anal cancer.

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Interpersonal Violence Victimization of Sexual and Gender Minority Youth: A Cross-Sectional Study of Risk and Protective Factors

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ABSTRACT

BACKGROUND: Little is known about risk and protective factors associated with distinct forms of violence victimization among lesbian, gay, bisexual, transgender, or questioning youth, or youth who define their sexual identity another way (LGBTQ+). This study sought to examine this in a statewide representative sample of Rhode Island high school students.

STUDY DESIGN AND METHODS: Data were from the 2023 Rhode Island High School Youth Risk Behavior Survey—a biennial, voluntary, and anonymous survey designed to measure health-related behaviors and experiences among high school students. The sample comprised 1,932 high school students (weighted sample n = 46,603), of whom 28% identified as lesbian, gay, bisexual, transgender, questioning, or defined their sexual identity another way ("LGBTQ+" weighted sample n=11,891). The primary outcomes of interest were three types of victimization: bullying/discrimination, intimate partner violence (IPV), and sexual coercion/exploitation. Bivariate analysis explored differences in rates of victimization based on sexual orientation and gender identity. Weighted logistic and multinomial regression models focused on LGBTQ+ youth and examined the role of risk and protective factors in victimization.

RESULTS: LGBTQ+ students who reported always having their basic needs met at home were less likely to experience IPV (Adjusted Odds Ratio [AOR]=0.53, 95% Confidence Interval [CI]= 0.31–0.88), sexual coercion/exploitation (AOR=0.38, 95% CI=0.17-0.85), and multiple types of victimization (AOR=0.32, 95% CI=0.18–0.57). Housing insecurity (AOR=3.36, 95% CI=1.73–6.50), ever living with someone with a drug/alcohol problem (AOR=2.56, 95% CI=1.63–4.04), and ever living with someone with mental illness (AOR=3.97, 95% CI=1.76–8.96) were associated with higher odds of sexual coercion/exploitation.

CONCLUSION: Overall, findings contribute to the understanding of distinct types of victimization that LGBTQ+ youth face. Further research into the relationship between risk factors associated with unstable home environments and victimization would be valuable in identifying opportunities for prevention.

KEYWORDS: interpersonal violence victimization; risk and protective factors; sexual and gender minority youth

INTRODUCTION

Interpersonal violence victimization, including dating violence, sexual violence, and bullying, is a serious public health problem among adolescents that is associated with long-term negative effects on health.[1] In 2023, an estimated 11% U.S. high school students reported experiencing sexual violence during the previous 12 months, and 8% experienced forced sex in their lifetime.[2] Other studies suggest rates of victimization are higher when accounting for psychological forms of abuse. Sexual minority (i.e., individuals who report non-heterosexual identity) and gender minority (i.e., individuals who do not identify with their sex assigned at birth) youth experience disproportionately greater prevalence of all forms of interpersonal violence victimization compared with their cisgender/straight peers.[1,3-12] However, most health surveys have not consistently included questions assessing sexual orientation and gender identity (SOGI) and thus risk factors for victimization are understudied in sexual and gender minority (SGM) youth.[13]

The present study examines risk and protective factors associated with distinct forms of violence victimization, as well as experiences of multiple types of victimization among SGM youth (Aim 1). Three understudied risk and protective factors are explored—the home and school environment and connectedness to others (Aim 2). This is the first Rhode Island study to estimate risk and protective factors in relationship to interpersonal violence victimization in a statewide representative sample of SGM high school students.

METHODS

Data were from the 2023 Rhode Island High School Youth Risk Behavior Survey (RI YRBS), a biennial, voluntary, and anonymous survey conducted by the Rhode Island Department of Health with support from the Centers for Disease Control and Prevention (CDC). The survey uses single-item multiple-choice questions to measure health-related behaviors and experiences among high school students. A total

of 25 Rhode Island schools were selected systematically with probability proportional to enrollment in grades 9 through 12 using a random start. Systematic equal probability sampling with a random start was used to select classes from each school that participated in the survey. No bias was found in nonresponse rates between responding versus nonresponding schools by school enrollment size, poverty measure, geographic location, or student grade. Nineteen of the 25 sampled eligible schools participated. The overall response rate of 56%. Data were weighted to obtain statewide population estimates.[14]

A combined sexual orientation and gender identity (SOGI) variable was created categorizing respondents as "cisgender and straight" or "lesbian, gay, bisexual, transgender, questioning, or described their sexual identify in another way (LGBTQ+)." This study uses cisgender to describe individuals whose gender identity and expression align with the sex they were assigned at birth. LGBTQ+ and sexual and gender minority (SGM) are used interchangeably as umbrella terms for youth with non-majority sexual orientations or gender identities.

The main outcome variables of interest were those related to experiences with violence victimization. Three types of victimization were identified based on factor analysis: bullying/discrimination, intimate partner violence (IPV), and sexual coercion/exploitation. Bullying/discrimination was defined as having experienced bullying on school grounds or electronically in the previous 12 months or having ever been treated badly/unfairly due to one's perceived SOGI status. Intimate partner violence was defined as experiencing physical or sexual dating violence in the past 12 months. Sexual coercion/exploitation was defined as ever being forced to have sex against one's will or having ever been given money, a place to stay, food, or something else of value in exchange for sex. Additionally, a combined victimization variable was created tabulating the types of victimization experienced (0, 1, or 2 or more).

Descriptive analyses were conducted to examine demographic characteristics of both groups (LGBTQ+ and cisgender/straight students) and the prevalence of all victimization outcomes and risk and protective factors of interest. Because victimization rates are higher among LGBTQ+ youth, regression analyses examining the relationship between risk and protective factors and victimization focused on LGBTQ+ high school students. Separate multivariable logistic regressions were computed to examine the role of risk and protective factors in each of the three types of victimization experienced (bullying/discrimination, IPV, and sexual exploitation/coercion). A multinomial logistic regression model was then computed modeling the relationship between risk and protective factors and the number of types of victimization experienced (0, 1, or 2 or more). All models adjusted for participants' sex.

Protective factors of interest included having an adult at school to talk to if you have a problem, always having basic needs met at home (safety, clean clothes, food), and getting the help needed when feeling sad/angry/anxious. Risk factors of interest included food insecurity (ever going hungry in the past 30 days because there was not enough food in the home), housing insecurity (ever getting kicked out of the home or not usually sleeping at home due to parents not being able to afford housing in the past 30 days), student substance use (current alcohol/ marijuana use or ever abusing pain medications), or ever living with someone with a drug or alcohol problem or who was depressed, mentally ill or suicidal.

RESULTS

In 2023, 1,932 Rhode Island high school students completed the YRBS—representing a statewide weighted sample of 46,603 students, of whom 28% identified as LGBTQ+ (weighted sample n =11,891). Among those who identified as LGBTQ+, the most common sexual orientation was bisexual (46.2%) and 14.4% identified as transgender [**Table 1**].

Analysis of victimization outcomes revealed LGBTQ+ high school students were more likely than cisgender/straight students to experience nearly all types of victimization assessed [**Table 2**]. Two-thirds (66.6%) of LGBTQ+ students were a victim of bullying and/or discrimination, 17.2% experienced dating violence in the past year, and 15.6% have been a victim of sexual coercion/exploitation in their lifetime. Rates among cisgender/straight students were significantly lower, with 21.9% experiencing bullying/discrimination (p<.0001), 7.3% experiencing dating violence (p<.0001), and 5.4% experiencing sexual coercion/exploitation (p<.0001).

Analysis of risk and protective factors found that among LGBTQ+ high school students, 59.3% have ever lived with someone who was depressed, mentally ill, or suicidal, which was two times higher than for cisgender high school students [26.5%; p<.0001; **Table 3**]. A higher percentage of LGBTQ+ students than cisgender students had ever lived with someone with a drug or alcohol problem (44.7% vs. 23.0%; p<.0001). Additionally, LGBTQ+ students were more likely than cisgender students to report substance use. (43.5% vs. 30.7%; p=.0004). Among high school students who reported having felt sad, empty, hopeless, angry, or anxious in the 12 months before the survey, cisgender students were about five times as likely to get the help needed than LGBTQ+ students (82.4% vs. 17.6%; p<.0001; data not shown).

Multivariable logistic regression models examined risk and protective factors associated with interpersonal violence victimization in the LGBTQ+ high school student sample. Ever living with someone who was depressed, mentally ill or suicidal emerged as a significant risk factor for experiencing bullying/discrimination (Adjusted Odds Ratio [AOR]=1.92,

95% Confidence Interval [CI]=1.22–3.03) [**Table 4**]. A second multivariable logistic regression model found that student substance use was a significant risk factor for IPV (AOR=2.35, 95% CI=1.17–4.68). Having one's basic needs met at home also emerged as a significant protective factor. Students who reported always having their needs met were less likely than those who do not always have their needs met to experience IPV (AOR=0.53, 95% CI=0.31–0.88).

Table 1. Demographic characteristics of Rhode Island high school students by sexual orientation and gender identity

	LGBTQ+ n=11,891, (28.0%)	Cisgender/ straight n=30,512 (72.0%)	*p*-value *
Age			0.27
≤14 years	1,139 (9.6%)	3,529 (11.6%)	
15 years	3,018 (25.4%)	7,741 (25.4%)	
16 years	2,761 (23.2%)	6,646 (25.4%)	
17 years	3,203 (26.9%)	6,914 (22.7%)	
18+ years	1,770 (14.9%)	4,558 (15.0%)	
Sex			<.0001
Female	8,655 (74.8%)	14,174 (46.6%)	
Male	2,923 (25.2%)	16,264 (53.4%)	
Race/ethnicity			0.04
White, Non-Hispanic	6,093 (51.9%)	15,749 (51.9%)	
Black, Non-Hispanic	1,062 (9.0%)	2,986 (9.8%)	
Hispanic	3,237 (27.6%)	9,418 (31.0%)	
Other, Non-Hispanic	1,351 (11.5%)	2,220 (7.3%)	
Sexual orientation			
Heterosexual	129 (1.1%)	30,512 (100%)	
Gay or lesbian	1,993 (16.8%)		
Bisexual	5,488 (46.2%)		
Other	2,206 (18.6%)		
Questioning	2,075 (17.4%)		
Gender identity			
Cisgender	8,996 (76.6%)	30,512 (100%)	
Transgender	1,695 (14.4%)		
Unsure	8,12 (6.9%)		
Don't know what this means	2,45 (2.1%)		

Source: 2023 Rhode Island Youth Risk Behavior Survey, weighted data
* *P* <=0.05 indicates the groups being compared are significantly different from one another.
LGBTQ+ = lesbian, gay, bisexual, transgender, questioning, or described their sexual identity in other way..

Table 2. Percentage of high school students who experienced victimization by sexual orientation and gender identity

	LGBTQ+ Percentage (95% CI)	Cisgender/ straight Percentage (95% CI)	*p*-value*
BULLYING/STIGMA			
Bullied at school[1]	27.1% (20.4–33.7%)	11.9% (8.4–15.3%)	<.0001
Bullied electronically[1]	21.7% (17.3–26.1%)	10.5% (8.3–12.6%)	<.0001
Any type of bullying[1]	33.4% (26.7–40.2%)	16.2% (12.6–19.8%)	<.0001
Discriminated against due to SOGI[2]	60.0% (53.9–66.0%)	7.8% (5.1–10.5%)	<.0001
Any bullying/stigma	66.6% (60.5–72.8%)	21.9% (17.4–26.4%)	<.0001
INTIMATE PARTNER VIOLENCE			
Sexual dating violence[1]	15.0% (11.9–18.1%)	5.3% (3.5–7.1%)	<.0001
Physical dating violence[1]	6.1% (3.8–8.5%)	3.6% (2.2–4.9%)	.05
Any dating violence	17.2% (14.4–20.0%)	7.3% (5.1–9.5%)	<.0001
SEXUAL COERCION/ EXPLOITATION			
Ever forced to have sex against will	14.4% (9.3–19.4%)	4.8% (2.9–6.7%)	<.0001
Ever given goods in exchange for sex[3]	5.3% (3.4–7.2%)	0.8% (0.1–1.6%)	.0002
Any sexual coercion/ exploitation	15.6% (11.0–20.2%)	5.4% (3.5–7.3%)	<.0001
TOTAL VICTIMIZATION			<.0001
0 types victimization	29.3% (24.3–34.3%)	73.1% (68.0–78.2%)	
1 types victimization	48.8% (44.4–53.2%)	21.32 (17.3–25.0%)	
2 types victimization	16.0% (12.7–19.4%)	4.2% (2.4–6.1%)	
3 types victimization	5.8% (3.7–7.9%)	1.5% (0.5–2.5%)	

Source: 2023 Rhode Island Youth Risk Behavior Survey, weighted data
SOGI = sexual orientation and gender identity
* P <=0.05 indicates the groups being compared are significantly different from one another.
1 Experienced victimization during the past 12 months.
2 "During your life, how often have you felt that you were treated badly or unfairly because you are or people think you are lesbian, gay bisexual, transgender, or questioning? This could include being treated badly of who you are sexually attracted to or because you express your gender in a way that is different from what people expect?"
3 "Ever been given money, a place to stay, food, or something else of value in exchange for sex?"

Table 3. Prevalence rates (%, n) of risk and protective factors for interpersonal violence victimization by sexual orientation and gender identity

	LGBTQ+ Percentage (95% CI)	Cisgender/ straight Percentage (95% CI)	*p*-value*
Risk Factors			
Food insecurity (past 30 days)[1]			.02
Ever food insecure	3,850 (32.6%)	8,230 (27.1%)	
Never food insecure	7,959 (67.4%)	22,175 (72.9%)	
Housing insecurity (past 30 days)[2]			.06
Any housing insecurity	898 (7.8%)	1,455 (4.9%)	
No housing insecurity	10,522 (92.2%)	28,404 (95.1%)	
Ever lived with someone with drug or alcohol problem			<.0001
Yes	5,127 (44.7%)	6,564 (23.0%)	
No	6,352 (55.3%)	23,286 (78.0%)	
Ever lived with someone depressed, mentally ill, or suicidal			<.0001
Yes	6,826 (59.3%)	7,853 (26.5%)	
No	4,683 (40.7%)	21,815 (73.5%)	
Substance use[3]			
Yes	4,896 (43.5%)	8,957 (30.7%)	.0004
No	6,352 (56.5%)	20,264 (69.3%)	
Protective Factors			
Basic needs met at home[4]			.09
Always	8,621 (71.3%)	23,110 (77.8%)	
Not Always	3,333 (28.7%)	6,589 (22.2%)	
Adult at school to talk to if having problems[5]			.09
Yes	6,525 (56.2%)	18,978 (63.2%)	
No	5,077 (43.8%)	11,054 (36.8%)	
Get help when sad/anxious[6]			<.0001
Don't feel sad/anxious	1,116 (9.6%)	9,880 (33.1%)	
Usually get help	1,861 (16.0%)	5,329 (17.8%)	
Don't usually get help	8,960 (74.5%)	14,679 (49.1%)	

Source: 2023 Rhode Island Youth Risk Behavior Survey, weighted data

p < = .05 indicates significant differences between LGBTQ+ Rhode Island high school students compared with their cisgender /straight peers.

1 "During the past 30 days, how often did you go hungry because there was not enough food in your home?"

2 "During the past 30 days, where did you usually sleep? " (other than parents/ guardian home) and "During the past 30 days, did you ever sleep away from your parents or guardians' home because you were kicked out, ran away, or were abandoned?"

3 Current (past 30 days) alcohol or marijuana use, or any lifetime misuse of pain medications

4 "During your life, how often has there been an adult in your household who tried hard to make sure your basic needs were met, such as looking after your safety and making sure you had clean clothes and enough to eat?"

5 "Is there at least one teacher or other adult in your school that you can talk to if you have a problem?"

6 "When you feel sad, empty, hopeless, angry, or anxious, how often do you get the kind of help you need?" (reference group: don't usually get help)

Table 4. Risk and protective factors associated with violence victimization experienced by LGBTQ+ high school students

	Type of victimization[1]		
	Any Bullying/ Discrimination AOR (95% CI)	Any IPV AOR (95% CI)	Any sexual coercion/ exploitation AOR (95% CI)
Demographics			
Female	0.89 (0.52–1.51)	1.33 (0.70–2.56)	1.22 (0.52–2.86)
Risk Factors			
Ever food insecure (past 30 days) [2]	1.16 (0.59–2.27)	1.22 (0.68–2.19)	1.31 (0.71–2.43)
Ever housing insecure (past 30 days) [3]	0.75 (0.26–2.13)	2.55 (0.91–7.16)	**3.36 (1.73–6.50)**
Ever lived with someone with drug or alcohol problem	1.40 (0.82–2.38)	1.05 (0.62–1.78)	**2.56 (1.63–4.04)**
Ever lived with someone depressed, mentally ill, or suicidal	**1.92 (1.22–3.03)**	1.71 (0.67–4.36)	**3.97 (1.76–8.96)**
Any substance use [4]	1.30 (0.82–2.07)	**2.35** (1.17–4.68)	**3.00** (1.66–5.44)
Protective Factors			
Basic needs always met at home[5]	0.62 (0.38–1.00)	**0.53 (0.31–0.88)**	**0.38 (0.17–0.85)**
Adult at school to talk to if having problems [6]	1.25 (0.93–1.67)	1.05 (0.62–1.78)	0.76 (0.41–1.40)
Help when sad/anxious [7]			
Don't feel sad/anxious	0.52 (0.32–1.04)	0.59 (0.21–1.70)	1.14 (0.39–3.35)
Most of the time get help	1.13 (0.57–2.35)	0.65 (0.24–1.78)	1.35 (0.52–3.53)

Source: 2023 Rhode Island Youth Risk Behavior Survey, weighted data

AOR = adjusted odds ratio

CI= confidence intervals

IPV= Intimate Partner Violence

1 Three outcomes were modeled in separate logistic regressions. Adjusted odds ratios and 95% confidence intervals shown in bold indicate that the risk or protective factor is significantly associated with victimization, controlling for other factors. All models controlled for participant's sex.

2 "During the past 30 days, how often did you go hungry because there was not enough food in your home?"

3 "During the past 30 days, where did you usually sleep? " (other than parents/guardian home) and "During the past 30 days, did you ever sleep away from your parents or guardians' home because you were kicked out, ran away, or were abandoned?"

4 Current (past 30 days) alcohol or marijuana use, or any lifetime misuse of pain medications

5 "During your life, how often has there been an adult in your household who tried hard to make sure your basic needs were met, such as looking after your safety and making sure you had clean clothes and enough to eat?"

6 "Is there at least one teacher or other adult in your school that you can talk to if you have a problem?"

7 "When you feel sad, empty, hopeless, angry, or anxious, how often do you get the kind of help you need?" (reference group: don't usually get help)

In the third outcome assessed—sexual coercion/exploitation among LGBTQ+ students, five factors assessed emerged as significant. Students who faced housing insecurity had more than three times the odds of sexual exploitation/victimization (AOR=3.36, 95% CI = 1.73–6.50) than those who did not face housing insecurity. Additionally, ever living with someone with a drug or alcohol problem (AOR=2.56, 95% CI=1.63–4.04), ever living with someone depressed, mentally ill, or suicidal (AOR=3.97, 95% CI=1.76–8.96), and student substance use (AOR=3.00, 95% CI=1.66–5.44) were associated with greater risks of sexual exploitation/victimization.

Lastly, like IPV, always having one's basic needs met at home emerged as a significant protective factor (AOR=0.38, 95% CI=0.17–0.85).

Results of a multinomial regression model found that among LGBTQ+ students, those who ever lived with someone who was depressed, mentally, ill, or suicidal had nearly four times the odds of experiencing multiple types of victimization [AOR=3.94, 95% CI=1.66–9.35; **Table 5**]. Having lived with someone who had an alcohol or drug problem (AOR=1.86, 95% CI=1.01–3.44) and student substance use (AOR=2.93, 95% CI=1.39–6.10) also were associated with increased risk of multiple victimization. Those who always have their basic needs met at home were significantly less likely to report multiple types of victimization (AOR=0.32, 95% CI=0.18–0.57).

Table 5. Multinomial regression models examining risk and protective factors associated with number of types of victimization experienced by LGBTQ+ high school students

	Number of types of victimization[1]	
	1 type AOR (95% CI)	2 or more AOR (95% CI)
Demographics		
Female	1.05 (0.55–1.88)	1.18 (0.47–2.98)
Risk Factors		
Ever food insecure (past 30 days) [2]	1.31 (0.69–2.49)	1.57 (0.75–3.30)
Ever housing insecure (past 30 days) [3]	0.72 (0.14–3.75)	1.81 (0.38–8.64)
Lived with someone with drug or alcohol problem	**1.71** (1.14–2.55)	**1.86** (1.01–3.44)
Lived with someone depressed, mentally ill, or suicidal	1.71 (0.91–3.23)	**3.94 (1.66–9.35)**
Any substance use [4]	1.00 (0.55–1.79)	**2.93 (1.39–6.10)**
Protective Factors		
Basic needs always met at home [5]	0.71 (0.38–1.33)	**0.32 (0.18–0.57)**
Adult at school to talk to if having problems[6]	1.38 (0.85–2.25)	1.18 (0.71–1.97)
Help when sad/anxious[7]		
Don't feel sad/anxious	0.62 (0.34–1.12)	0.51 (0.16–1.65)
Most of the time get help	0.93 (0.37–2.34)	0.86 (0.28–2.62)

Source: 2023 Rhode Island Youth Risk Behavior Survey, weighted data
AOR = adjusted odds ratio
CI= confidence intervals

1 The reference group is experiencing 0 types of violence victimization versus experiencing 1 type or 2 or more types of victimization. Adjusted odds ratios and 95% confidence intervals shown in bold indicate that the risk or protective factor is significantly associated with victimization. All models controlled for participant's sex.

2 "During the past 30 days, how often did you go hungry because there was not enough food in your home?"

3 "During the past 30 days, where did you usually sleep? " (other than parents/guardian home) and "During the past 30 days, did you ever sleep away from your parents or guardians' home because you were kicked out, ran away, or were abandoned?"

4 Current (past 30 days) alcohol or marijuana use, or any lifetime misuse of pain medications

5 "During your life, how often has there been an adult in your household who tried hard to make sure your basic needs were met, such as looking after your safety and making sure you had clean clothes and enough to eat?"

6 "Is there at least one teacher or other adult in your school that you can talk to if you have a problem?"

7 "When you feel sad, empty, hopeless, angry, or anxious, how often do you get the kind of help you need?" (reference group: don't usually get help)

DISCUSSION

This is the first study to use data from a statewide representative survey of Rhode Island high school students to estimate risk and protective factors for multiple measures of interpersonal violence victimization among LGBTQ+ youth. The findings add to a growing body of research that LGBTQ+ youth face disproportionately higher rates of victimization, often experiencing multiple, concurrent forms of intimate partner violence and sexual coercion, compared to non-sexual and gender minority youth.[5,15]

Regression models focused solely on LGBTQ+ high school students. Seventy percent of LGBTQ+ students in this study experienced one or more forms of interpersonal violence victimization. Three important risk factors included in the regression models were students' home and school environments and school connectedness. LGBTQ+ students who reported always having their basic needs met at home were less likely to experience IPV, sexual coercion/exploitation, and multiple forms of violence victimization. Housing insecurity was associated with higher odds of sexual coercion and exploitation. Although the exact number is unknown, unhoused LGBTQ+ youth who engage in "survival sex" (exchanging sex for food, shelter, or basic needs) are highly vulnerable to assault, trauma, and trafficking.[16,17] Another key finding was that LGBTQ+ youth who ever lived with someone who was mentally ill or had a problem with drugs or alcohol had increased odds of being the victim of sexual coercion/exploitation and multiple forms of victimization. The relationship between a young person's home environment and interpersonal violence victimization is undoubtedly complex. Improved data collection on risk factors that

contribute to LGBTQ+ youth being unhoused would be valuable in identifying opportunities for prevention.[18] Such efforts would benefit from including standard questions for adverse childhood experiences (ACEs) with an LGBTQ+ identifier, as LGBTQ+ youth experience significantly higher rates of ACEs compared to their cisgender peers (e.g., sexual, physical, and/or emotional abuse, household instability).[19] One example would be the ACE question, "Have you ever experienced sexual abuse because of your LGBTQ+ identify?"

Connectedness to others was not a significant protective factor in any regression models, whether measured as having a trusted adult at school to talk to when there was a problem, or getting the kind of help needed when feeling sad, hopeless, angry, or anxious. There is limited research on having an important adult to turn to as a protective factor for reducing risk of youth violence victimization.[20] Having a trusted adult in one's school can be challenging for LGBTQ+ students. Stigma, discrimination, and prejudice directed toward LGBTQ+ youth function as powerful mechanisms of gender policing, decreasing opportunities for LGBTQ+ youth to feel connected to and accepted by teachers and other adults in their school. High school students who are perceived by others to express their gender in ways that do not conform to their self-reported sex are at greater risk of rejection from teachers and their peers, especially gender-nonbinary youth assigned male at birth.[21]

Creating a safe and affirming school environment for LGBTQ+ youth requires a multipronged approach. Several research studies have created evidence-based frameworks to better protect and support LGBTQ+ youth in schools.[22-24] Key strategies include: 1) explicit anti-bullying school policies that are inclusive of sexual orientation and gender identity; 2) cultural sensitivity training for teachers and other school staff to support young people who identify as LGBTQ+; 3) empowering and supporting LGBTQ+ students to create their own safe spaces (e.g., clubs, teams, school-based gender and sexuality alliances); 4) Implementing LGBTQ-inclusive curricula.

Schools can make a positive difference in implementing policies and practices to create environments for LGBTQ+ youth to thrive. But schools alone cannot prevent violence against LGBTQ+ youth. Two public health approaches for those working with and on behalf of LGBTQ youth to consider are offered here.

Systems-level

Systems that interact with SGM youth, such as child welfare agencies, should consider screening for commercial sexual exploitation and survival sex when a child or adolescent is removed from the home based on lack of housing or significant substance use by members of the household. Currently, there is no consensus screening tool to identify trafficking experiences among runaway and unhoused LGBTQ+ youth. The Commercial Sexual Exploitation-Identification Tool[25] and the Human Trafficking Screening Tool[26] are two validated screening tools for youth involved with the child welfare system or receiving services from anti-trafficking agencies to better identify exploitation of vulnerable youth, including unhoused LGBTQ+ youth engaged in commercial sex to meet their basic needs.

Individual-level

Social workers and other healthcare professionals caring for LGBTQ+ youth should implement gender-affirming care for LGBTQ+ youth whose experiences of discrimination, physical threats, and stigma contribute to disproportionately high rates of anxiety, depression, and suicide risk.[27] Key practices include:1) using inclusive language; 2) respecting pronouns; 3) creating safety for young patients to disclose their concerns without fear of parental involvement (subject to state laws and the federal Health Insurance Portability and Accountability Act (HIPAA) to protect sensitive patient health information from being disclosed without consent); 4) implementing trauma-informed care; 5) understanding the societal causes of anxiety and depression (stigma, discrimination) that put LGBTQ+ youth at increased risk for negative health and life outcomes; and 6) connecting youth with LGBTQ+ youth-affirming organizations and, when needed, referring youth to healthcare practices that specialize in LGBTQ+ care.

Limitations

Due to sample size, we could not compare risk and protective factors for interpersonal violence victimization by SGM subgroups. Additionally, the temporality of risk/protective factors and victimization cannot be fully ascertained in cross-sectional data.

IMPLICATIONS AND CONCLUSION

The current study provides an important foundation for researchers, educators, and healthcare professionals working to prevent interpersonal violence victimization among LGBTQ+ youth. Although other studies have examined violence victimization among youth, our findings demonstrate a need for continued assessment of interpersonal violence victimization and sexual exploitation of LGBTQ+ youth without comparison to their cisgender peers.

Decades of research have shown that systems-level changes are needed to reverse policies, laws and social norms that make perpetration of violence against LGBTQ+ youth acceptable. LGBTQ+ youth experience elevated rates of violence victimization driven by minority stress, structural inequalities, and exposure to risk factors across the social ecology.

Longitudinal trajectories of interpersonal violence victimization onset, continuation, and escalation from early

adolescence to young adulthood that account for co-occurring social identities based on race, ethnicity, sexual orientation, and gender identity are needed due to intersecting systems of oppression, such as racism, homophobia, and transphobia.[3] Efforts to reduce and prevent violence victimization must be comprehensive, addressing legislative and policy actions to uphold protections for LGBTQ+ youth. Such efforts should be implemented concurrently with school, healthcare, and community-based interventions informed by research and data that support the health and well-being of LGBTQ+ youth.

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Restrictive Masculinity Norms and Behavioral Health Outcomes Among Rhode Island Sexual and Gender Minority Young Adults

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ABSTRACT

INTRODUCTION: Restrictive masculinity norms (RMNs), characterized by emotional suppression, dominance, and risk-taking, have been linked to adverse health among cisgender heterosexual men. Little is known about how RMNs operate among sexual and gender minority (SGM) populations, particularly transgender young adults.

METHODS: Data were from the 2024 Rhode Island Young Adult Survey, a cross-sectional, web-based survey of adults aged 18–25 years. Analyses were restricted to SGM participants (n=438), with sub-analyses among transgender young adults (n=100). RMNs were measured using a 12-item questionnaire. Outcomes include alcohol use disorder (AUD), cannabis use disorder (CUD), heroin use, intimate partner violence (IPV), problematic pornography use, and problem gambling. Modified Poisson regressions with robust standard errors were used to assess main effects after adjusting for sex assigned at birth, transgender identity, age, race/ethnicity, and social status.

RESULTS: Among SGM young adults, a one-unit increase in RMNs score was associated with increased risk of all outcomes [AUD: 1.13 (95%CI 1.08, 1.18); CUD: 1.03 (95%CI 1.01, 1.06); heroin use: 1.22 (95%CI 1.13, 1.31); IPV: 1.04 (95%CI 1.02, 1.06); problematic pornography use: 1.05 (95%CI 1.02, 1.09); problem gambling: 1.11 (95%CI 1.07, 1.15)]. Associations were consistently stronger among transgender young adults, including a markedly elevated risk for heroin use [4.91 (95%CI 3.30, 7.31)], while the association with CUD was not statistically significant.

CONCLUSIONS: RMNs are associated with adverse behavioral health among SGM young adults and exert a disproportionate impact on transgender individuals. Addressing RMNs may represent an important, modifiable pathway for reducing behavioral health inequities during young adulthood.

KEYWORDS: restrictive masculinity; young adults; sexual and gender minorities; transgender

INTRODUCTION

Restrictive Masculinity Norms (RMNs) are rigid societal standards rooted in traditional cisgender male ideals that define expectations of masculinity, including risk-taking, emotional toughness, self-reliance, dominance, aggression and anti-femininity.[1,2] They are often highly reinforced and celebrated culturally, including in widespread media portrayals and through everyday social norms.[3] At a structural level, these norms organize financial, sexual, and social power in ways that maintain and reinforce male dominance.[4]

Adherence to RMNs has been associated with poorer health and well-being, particularly through avoidance of vulnerability and help-seeking, as well as increased engagement in risky behaviors such as: substance use, aggression, and sexual behaviors.[5,6] However, existing research largely focuses on cisgender heterosexual men,[7] leaving limited understanding of how these norms affect sexual and gender minority (SGM) health, and particularly transgender individuals.

For SGMs, RMNs are considered within a heteronormative social context that privileges cisgender heterosexuality and traditional gender roles.[8] For transgender and gender-diverse individuals, these norms may be especially salient, due to heightened gender policing and pressures related to gender legitimacy.[9] As a result, RMNs may differentially shape stress exposure, identity development, and coping behaviors, warranting examination by transgender status rather than treating SGM populations as homogenous.

From the perspective of Minority Stress Theory, RMNs may function as chronic stressors by reinforcing stigma, discrimination, and pressures to conform to dominant gender expectations, with transgender individuals potentially experiencing compounded stress, due to the intersection of gender-identity stigma and rigid gender-norm enforcement.[8] These norms are often internalized at a young age and may contribute to psychological distress and mental health disparities.[10] Chronic exposure to such stressors has been associated with poorer mental health outcomes and maladaptive coping strategies, which may manifest in risky or compulsive behaviors similar to those observed among cisgender heterosexual men due to RMNs.[11]

Young adulthood represents a critical developmental period characterized by identity exploration, risk-taking, and the highest rates of anxiety and depression.[12-14] SGM

young adults experience disproportionate mental health burdens during this stage, yet the role of RMNs in this disparity remains unexamined.[15] Accordingly, this study aims to assess associations between RMNs and multiple behavioral outcomes—including alcohol use disorder (AUD), cannabis use disorder (CUD), heroin use, intimate partner violence (IPV), problematic pornography use, and gambling problems—among SGM young adults, with separate analyses by transgender status to identify distinct risk pathways.

METHODS

Sample

This study utilized data from the 2024 administration of the Rhode Island Young Adult Survey (RIYAS). This survey is web-based in Qualtrics and is implemented by the Rhode Island Department of Behavioral Health, Developmental Disabilities & Hospitals (BHDDH). Eligible participants included young adults aged 18–25 years old who reside in Rhode Island for at least part of the year. Data collection occurred from May through August of 2024. Recruitment was conducted via targeted paid ads on Instagram and Spotify, as well as informal emails to multiple institutions of higher education across the state. This was a self-report survey that took an average of 20 minutes to complete. All participants received a $10 electronic gift card. All respondents provided electronic informed consent. This study was approved by the local institutional review board. Among the total sample (n=1,008), those who identified as sexual and/or gender minority individuals were included in this study. This includes those who responded that their sexual orientation was anything other than heterosexual (e.g., gay/lesbian, bisexual, pansexual, etc.) or that their self-reported gender identity did not align with their sex assigned at birth, or they reported themselves to be transgender (n=442). Those who reported their sex assigned at birth as intersex (n=4) were excluded due to a small sample size when controlling for sex assigned at birth. This yielded a final analytic sample of n=438. Sub-analyses were also restricted to those SGMs who responded *yes* to "Do you identify as transgender?" (n=100).

Measures

The primary exposure of interest in this study is RMNs. This was assessed by a 12-item measure known as the Restrictive Masculinity Scale, which evaluates the extent to which individuals endorse rigid or traditional masculine norms. The scale includes statements such as, "Men should be able to cry openly when they feel emotional," and, "If a woman declines sex, men should respect that choice." Responses were recorded on a 5-point scale, ranging from 0 (strongly disagree) to 4 (strongly agree). After scoring, possible total values ranged from 0, representing the lowest endorsement of restrictive masculinity norms, to 48, representing the highest endorsement.[16]

Alcohol use disorder was measured using the Alcohol Use Disorders Identification Test (AUDIT), a valid and reliable 10-item screening tool.[17] Scores were calculated using standard scoring procedures, and participants with scores ≥15 were categorized as having AUD (α=0.82). Cannabis use disorder was evaluated using the Cannabis Use Disorders Identification Test-Revised (CUDIT-R), a valid and reliable 8-item screening instrument.[18] Items were scored following standard scoring procedures, and participants with scores of ≥12 were categorized as having CUD (α=0.83). Heroin use was assessed by the question, "Have you ever used heroin?" Those with response options "yes, in the past month" or "yes, more than a month ago" were considered to have used heroin. Intimate partner violence was measured in response to the question, "Have you ever experienced verbal or physical abuse or threats from a romantic partner?" Those responding "yes, in childhood" or "yes, in adulthood" were considered to have experienced IPV. Problematic pornography use was measured using the valid and reliable 6-item Problematic Pornography Consumption Scale (PPCS-6).[19] Item scores were summed in accordance with scoring instructions (α=0.87), and those with scores of ≥20 were categorized as having problematic pornography consumption. Problem gambling was measured using the valid and reliable 3-item Brief Biosocial Gambling Screen (BBGS), an instrument designed to identify behaviors associated with gambling-related harm.[20] Each item had a Yes/No response format, and endorsement of at least one item was defined as problem gambling. The items asked respondents whether, in the past 12 months, they: (1) felt restless, irritable, or anxious when attempting to reduce or stop gambling; (2) tried to hide the extent of their gambling from family or friends; or (3) experienced financial difficulties severe enough to require assistance with basic expenses.

Other covariates were included because they are considered potential confounders in the relationship between RMNs and the various outcomes.[21] These include sex assigned at birth (female, male), transgender identity (yes/no), age (in years), race/ethnicity (White, Black, Hispanic, Asian, something else), and social status. Perceived social status was assessed using the MacArthur Social Ladder. Participants indicated where they believed they ranked within their community on a scale from 1 (worst off) to 10 (best off).[22]

Statistical Analysis

The analytic sample of sexual and gender minorities (n=438) was first described by all study variables using frequencies and percents. Two-sample t-tests were used to compare mean RMN scores by transgender identity and each of the study outcomes. Crude and multivariable modified Poisson regression with robust standard errors was used to examine the relationship between RMNs and each of the study outcomes among the full SGM sample, as well as transgender young adults specifically. Because odds ratios from logistic

regression can substantially overestimate risk ratios, even for relatively rare outcomes, modified Poisson regression with robust standard errors were used to directly estimate risk ratios. This approach provides more interpretable effect estimates and avoids convergence issues associated with log-binomial models.[23] Adjusted models controlled for sex assigned at birth, transgender identity, age, race/ethnicity, and social status. Model coefficient estimates were exponentiated to report risk ratios (RRs) and adjusted RRs (aRRs) along with their corresponding 95% confidence intervals. Statistical significance was determined using a threshold of α=0.05. All statistical analyses were conducted in Stata, version 15.[24]

RESULTS

The sample of sexual and gender minority young adults in Rhode Island was predominantly female (82.4%) and White (60.7%). The young adults had a mean age of 21.06 years (SD: 0.11) and mean social status of 5.39 (SD: 0.09). The poor health outcomes among SGM young adults ranged in prevalence from 29.0% experiencing IPV, 18.3% meeting the definition for CUD, 9.4% with problematic pornography use, 5.3% with problem gambling, 3.4% meeting the definition of AUD, to 1.1% reporting heroin use. The mean RMNs score, which can range from 0 to 48, with higher scores showing greater endorsement of restrictive norms, was 24.01 (SD: 0.31) in this sample [**Table 1**]. Transgender young adults had lower mean RMNs score [22.0 (SE: 0.61)] than those who did not identify as transgender [24.6 (SE:0.35); p<0.001], while those with AUD (p<0.001), heroin use (p<0.001), IPV (p=0.002), problematic pornography use (p<0.001), and problem gambling (p<0.001) had higher RMNs scores than their non-outcome counterparts [**Figure 1**]. Only those with CUD relative to those without had insignificant differences in mean RMNs scores (p=0.075).

In crude and adjusted models, RMNs were positively associated with all outcomes among SGM young adults [**Table 2**]. Similarly, among transgender young adults specifically, all crude relationships, except between RMNs and CUD, were significant and positive. After controlling for all covariates, these findings remained [**Table 2**].

Table 1. Sexual and Gender Minorities Sample (N = 438), RIYAS 2024

Variable	N	%
Sex Assigned at Birth		
Female	361	82.4
Male	77	17.6
Transgender		
Yes	100	22.8
No	338	77.2
Age [Mean (SD)]	21.06	0.11
Race/Ethnicity		
White	266	60.7
Black	23	5.3
Hispanic	82	18.7
Asian	31	7.1
Something Else	36	8.2
Social Status [Mean (SD)]	5.39	0.09
Alcohol Use Disorder	15	3.4
Cannabis Use Disorder	80	18.3
Heroin Use	5	1.1
Intimate Partner Violence	127	29.0
Problematic Pornography Use	41	9.4
Problem Gambling	23	5.3
Restrictive Masculinity Norms [Mean (SD)]	24.01	0.31

Figure 1. Mean Restrictive Masculinity Scale by Behavioral Health Outcomes among Sexual and Gender Minority Young Adults

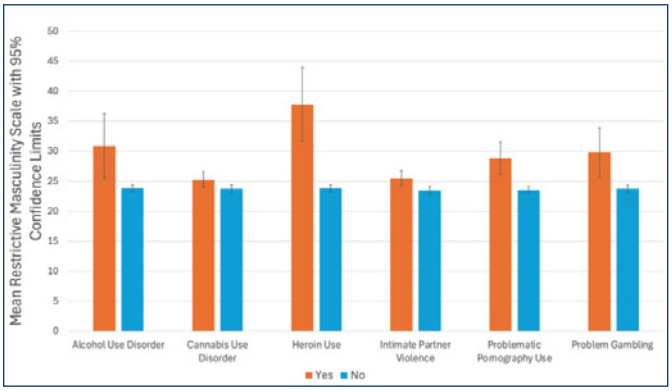

Table 2. Adjusted Risk Ratios for Outcomes Associated with a One-Unit Increase in Restrictive Masculinity Norms Score among SGM and Transgender Young Adults

	SGM Young Adults (n=438)		Transgender Young Adults (n=100)	
Outcome	**aRR**	**95% CI**	**aRR**	**95% CI**
Alcohol Use Disorder	1.13	1.08–1.18	1.16	1.10–1.24
Cannabis Use Disorder	1.03	1.01–1.06	1.03	0.97–1.08
Heroin Use	1.22	1.13–1.31	4.91	3.30–7.31
Intimate Partner Violence	1.04	1.02–1.06	1.05	1.02–1.08
Problematic Pornography Use	1.05	1.02–1.09	1.11	1.01–1.21
Problem Gambling	1.11	1.07–1.15	1.16	1.08–1.24

NOTE: Modified Poisson regression with robust standard errors was used and coefficients were exponentiated. Adjusted models among SGMs controlled for sex assigned at birth, transgender identity, age, race/ethnicity, and social status. Adjusted models among transgender individuals controlled for the same except for transgender identity. All models were statistically significant.

DISCUSSION

Higher endorsement of RMNs among SGM young adults is associated with an increased risk of multiple, adverse, behavioral health outcomes, AUD, CUD, heroin use, IPV, problematic pornography use, and problem gambling. These findings extend previous research conducted largely among cisgender heterosexual men, by demonstrating that RMNs remain harmful even within populations that, on average, endorse more flexible gender norms.[7,25] Notably, associations were often stronger among transgender young adults, identifying RMNs as a particularly salient and underrecognized contributor to behavioral health inequities within this population.

Although SGM young adults tend to endorse less restrictive gender norms than cisgender heterosexual individuals, these findings demonstrate that when RMNs are internalized, they are associated with harm. Within the context of minority stress, pressures to conform to dominant gender expectations may compound experiences of stigma and marginalization, reinforcing self-reliance, emotional suppression, and avoidance of help-seeking. These dynamics may increase vulnerability to maladaptive coping behaviors.[26]

Among transgender young adults, RMNs appear to exert a disproportionately strong influence on behavioral health outcomes. Despite lower average RMNs endorsement, transgender participants demonstrated larger effect sizes across nearly all outcomes, suggesting that even modest internalization of RMNs may carry increased risk. This pattern highlights the importance of examining RMNs by transgender status, as analyses that aggregate SGMs may obscure greater vulnerability among transgender young adults.

INTIMATE PARTNER VIOLENCE

The association between RMNs and IPV observed in this study is consistent with findings from cisgender heterosexual samples, while extending this literature to SGM and transgender young adults.[27] From a gender role strain perspective, rigid masculine expectations emphasizing dominance, aggression, and emotional suppression may generate chronic psychological strain when these ideals conflict with an identity.[28] In SGM relationships, gendered power expectations may be negotiated differently across partners, potentially increasing vulnerability to IPV when masculinity is asserted to validate identity or avoid perceived loss of power.[29] Together, these findings suggest that RMNs may compound minority stress, exacerbating risk for IPV.

SUBSTANCE-RELATED OUTCOMES

Restrictive masculinity norms were also significantly associated with substance-related outcomes, including AUD, CUD, and heroin use. Substance use may serve as an avoidance-based coping strategy for managing emotional distress, or identity strain when vulnerability and help-seeking are discouraged.[30] Associations were particularly pronounced among transgender young adults, including a markedly elevated risk ratio for heroin use, suggesting that RMNs may contribute to escalation toward higher-risk substances when access to adaptive coping and care is limited. The absence of a statistically significant association between RMNs and CUD among transgender participants may reflect limited statistical power.

PROBLEMATIC PORNOGRAPHY USE AND PROBLEM GAMBLING

Restrictive masculinity norms were additionally associated with problematic pornography use and problem gambling—behaviors linked to impulsivity, sensation-seeking, and emotional disengagement.[31] Avoidance of vulnerability and emotional intimacy, central features of RMNs, may increase reliance on solitary or compulsive coping behaviors among SGM young adults. The stronger associations observed among transgender young adults in this study indicate that RMNs may partially explain these disparities by reinforcing risk-oriented coping strategies in the context of chronic stress.

Overall, these findings suggest that RMNs contribute to behavioral health risks among SGM young adults through mechanisms of gender role strain shaped by heteronormativity and stigma. Addressing rigid gender norms may therefore represent a meaningful opportunity to intervene in these health outcomes at a societal level.

Limitations

This study is subject to several limitations. The cross-sectional design precludes causal inference, and self-reported data may introduce selection and reporting bias. Findings may not be fully generalizable to all SGM young adults in Rhode Island. Additionally, males were underrepresented in the sample, which may have resulted in conservative estimates of RMN endorsement and associated risks.

IMPLICATIONS

These findings highlight RMNs as a public health concern among SGM young adults, particularly transgender individuals. RMNs may function as modifiable, upstream social determinants of behavioral health risk and should be considered within SGM-affirming healthcare, prevention, and intervention frameworks. Routine assessment of RMNs in clinical and community settings such as primary care, campus health services, and behavioral health screening programs may help identify individuals at increased risk and inform more tailored, upstream interventions.

Practitioners should adopt strength-based approaches that reframe the disclosure of poor health outcomes as acts of

resilience and courage.[32] By using affirming, supportive language, such as recognizing a patient's strength in navigating the pressures of RMNs, clinicians can foster a safer, more trusting environment that encourages help-seeking among young adults. Centering validation of SGM young adults' experiences and promoting a sense of wholeness are essential to supporting mental wellbeing and preventing adverse behavioral health outcomes.[33]

Interventions that promote emotional regulation, adaptive communication, and critical reflection on gender norms may enhance engagement and safety when implemented alongside efforts to address stigma, discrimination, and barriers to care. Addressing RMNs within broader structural contexts may strengthen public health efforts to improve behavioral health and reduce disparities among SGM young adults.

CONCLUSIONS

Greater endorsement of RMNs was associated with increased risk of multiple, adverse, behavioral health outcomes among SGM young adults, with particularly strong effects among transgender individuals. These findings extend existing research on RMNs beyond cisgender heterosexual populations and underscore the importance of addressing rigid gender norms as part of efforts to reduce behavioral health inequities.

Promoting more expansive and inclusive understandings of gender may improve health outcomes not only for SGM communities, but for society as a whole. Young adulthood represents a critical window for this work, as norms established during this period shape long-term health trajectories. Addressing RMNs early may therefore yield lasting benefits for individual wellbeing, community health, and social equity.

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Evaluating the Health of Transgender Adults in Rhode Island: A Five-Year Population-Based Analysis

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ABSTRACT

OBJECTIVE: Transgender individuals experience social and structural marginalization that can have a significant impact on physical and mental health. While prior studies have explored health disparities across various settings in the United States, not much is known about the health of the transgender population in Rhode Island. The purpose of this analysis was to understand the health issues faced by transgender adults in RI.

STUDY DESIGN AND METHODS: Data are from the 2020-2024 Rhode Island Behavioral Risk Factor Surveillance System (RI BRFSS), an annual telephone survey of non-institutionalized adults. Five years of data were pooled and weighted to provide average yearly population estimates. Multivariable logistic regression analyses were conducted to estimate the prevalence of various health outcomes among transgender adults compared to cisgender adults.

PRIMARY RESULTS: Overall, 1.0% of Rhode Island adults identified as transgender. After adjusting for age and race/ethnicity, transgender adults had more than three times the odds of reporting fair/poor overall health and frequent mental distress, nearly three times the odds of reporting a history of depression, and more than four times the odds of having any disability. Transgender and cisgender adults had similar rates of health insurance coverage, having a primary care provider, and having a medical checkup in the past year.

PRINCIPAL CONCLUSIONS: This analysis demonstrates persistent health disparities among transgender adults in RI. Continued surveillance, affirming clinical practices, intentional screening, improved access to behavioral and gender-affirming care, and supportive policies are necessary to improve the health of transgender adults in RI.

KEYWORDS: Transgender health; health disparities; mental health, disability; healthcare access

INTRODUCTION

Transgender individuals include a group of people whose gender identity or expression differs from their sex at birth. In the United States, about 2.8 million individuals identify as transgender, comprising approximately 0.8% of the population.[1] Importantly, transgender individuals experience social and structural marginalization that can have a significant impact on physical and mental health. A number of studies have found that compared to cisgender peers (people with the same gender as their birth sex), transgender individuals are more likely to experience poorer overall health, more frequent mental distress, depression, and disability.[2-6] Specifically, recent reports indicate transgender individuals have approximately two to three times the odds of being diagnosed with depression compared to cisgender individuals, and substantially higher prevalence of suicidal ideation and suicide attempts, with lifetime suicide attempt rates estimated to be more than four times higher than those in the general population.[7,8] These disparities persist across many other health diseases and conditions, including chronic diseases, HIV, and other sexually transmitted infections (STIs).[6,9,10] Previous research has also documented disparities in healthcare access and certain health behaviors among transgender adults.[3,4,11]

The reasons for these health disparities are multifactorial. They include intersecting identities as well as "minority stress", which refers to the growing body of evidence that demonstrates that external factors such as stigma, discrimination, and systemic inequalities lead to chronic stress and significant health issues. Studies have shown that experiences of discrimination and structural inequalities are associated with increased psychosocial distress, poorer health, and reduced access to care among transgender individuals.[2,7,9]

While prior studies have explored health disparities across various settings in the United States, not much is known about the health of the transgender population in Rhode Island. Thus, the purpose of this analysis was to understand the health issues faced by transgender adults in Rhode Island.

METHODS

Data are from the 2020–2024 Rhode Island Behavioral Risk Factor Surveillance System (RI BRFSS). The RI BRFSS is an annual telephone survey of non-institutionalized adults aged 18 and older administered by the Rhode Island Department of Health (RIDOH) with support from the Centers for Disease Control and Prevention (CDC), and is used to measure

risk behaviors and health. Data from the survey sample are weighted to obtain statewide population estimates. Five years of data were pooled to obtain an adequate sample size, and sample weights were then proportionally adjusted accounting for the number of respondents each survey year to provide average yearly population estimates. Gender identity was measured using the question "*Do you consider yourself to be transgender?*" Individuals who responded "*Yes*" were categorized as "transgender" and those who said "*No*" were categorized as "cisgender." Those who said they didn't know, were unsure, or refused to answer the question were excluded from analyses.

The demographic characteristics of transgender and cisgender adults were compared using chi-square to test for statistical significance. Chi-square tests were then used to compare the prevalence of health outcomes between the two groups. Health outcomes evaluated included general health, chronic disease, disability, mental health and health behaviors. Because the demographic characteristics of cisgender and transgender adults differ, additional multivariable logistic regression analyses were conducted adjusting for age and race/ethnicity. Sociodemographic variables (e.g., education, household income) were not included in the adjusted analysis since they may be part of the causal pathway between gender identity and health. Health outcomes of interest included measures of overall health, chronic disease, disability, mental health, health behaviors, and healthcare access. All outcomes were binary and those with missing responses or responses of "don't know" or "refused" were excluded from the analyses. For all analyses statistical significance was defined as p<0.05.

Table 1. Demographics and gender identity among RI adults (BRFSS 2020–2024)

	Gender Identity		P
	Transgender (N=8,733 1.0%)	Cisgender (N=843,752 99.0%)	
Sex			0.21
Male	41.7%	48.1%	
Female	58.3%	51.9%	
Age Group			**<.0001**
18–29 years	64.1%	18.7%	
30–44 years	21.2%	25.2%	
45–64 years	10.3%	31.6%	
65+ years	4.3%	24.5%	
Race/Ethnicity			**0.004**
Person of color	42.8%	28.6%	
Non-Hispanic, White	57.2%	71.4%	
Incomes			**<.0001**
Less than $25,000	30.3%	16.5%	
$25,000–49,999	33.2%	22.5%	
$50,000–74,999	15.3%	15.6%	
$75,000+	21.2%	45.5%	
Educational Attainment			**0.002**
Did not graduate high school	20.3%	10.6%	
Graduated high school	38.2%	28.6%	
Some college	24.2%	28.4%	
Graduated college	17.4%	32.3%	

Notes: p-values based on chi-square test, significant difference defined as p<.05; Total N reflects average yearly population estimate from 2020–2024

RESULTS

From 2020–2024 a total of 28,128 adults completed the BRFSS. Those who did not know or did not respond to the question about gender identity were excluded from all analyses (unweighted n=1068). The annual prevalence of individuals identifying as transgender ranged from 0.6% in 2020 to 1.7% in 2024. Overall, from 2020-2024, on average 1.0% of RI adults (unweighted n=170, equivalent to an annual population estimate of 8,733 individuals) identified as transgender. Analysis of demographic characteristics revealed that transgender adults were significantly younger than cisgender adults (e.g., 64% of transgender adults are aged 18–29 years, compared to 19% of cisgender adults; **Table 1**). Transgender adults were also less likely to identify as White and reported lower educational attainment and household income (p<0.05).

Bivariate analysis of gender identity and general health found that transgender adults were significantly more likely than cisgender adults to rate their overall health as fair/poor (32.6% vs. 15.5%, p<.0001), and to have a disability (54.4% vs. 27.4%, p<.0001). These differences remained significant after adjusting for age and race/ethnicity, as transgender individuals had more than three times the odds of reporting fair or poor overall health (adjusted odds ratio [AOR]=3.25, 95% Confidence Interval [95% CI]:1.94-5.46), and more than four times the odds of having a disability (AOR=4.09, 95% CI: 2.63–6.38) [**Table 2**]. Unadjusted analysis of specific disability indicators showed that transgender adults were more likely to report vision problems and difficulty concentrating/making decisions, doing errands alone, and dressing/bathing themselves due to a physical, mental, or emotional condition. After adjusting for age and race/ethnicity, these results remained significant, and differences in difficulty walking and hearing emerged as significant.

Unadjusted analysis indicated that transgender adults were at lower risk of chronic disease. However, after adjusting for differences in age and race/ethnicity, the odds of having a chronic disease was significantly higher among transgender individuals than among cisgender individuals (AOR=1.72, 95% CI: 1.13–2.61). Adjusted analysis of specific, chronic-disease indicators found that rates of diabetes, arthritis,

and cardiovascular disease were similar between groups, but that transgender adults were significantly more likely to have asthma. There were no differences between groups in rates of obesity in either unadjusted or adjusted analysis. Analysis of health behaviors found that even after adjusting for differences in age and race/ethnicity transgender adults were significantly more likely than cisgender adults to report no exercise in the past 30 days and to use marijuana. There were no differences between the two groups in the prevalence of cigarette smoking [**Table 2**].

Analysis of mental health indicated that transgender adults were significantly more likely than cisgender adults to report a history of depression and current frequent mental distress and were less likely to report receiving the social support they need [**Table 2**]. These significant differences were present both in unadjusted analysis of gender identity and health and in multivariable models adjusting for age and race/ethnicity. Even after accounting for differences in age and race/ethnicity, transgender individuals were more than three times as likely as cisgender individuals to report frequent mental distress (AOR=3.60, 95% CI: 2.38–5.45), and nearly three times as likely to report history of depression (AOR=2.98, 95% CI: 1.97–4.49).

Bivariate analysis of gender identity and healthcare access indicated that transgender adults were significantly less likely to have a primary care provider, have had a checkup in the past year, and to have had a dental visit in the past year. However, these differences appear to be largely explained by age and race/ethnicity, as after adjusting for these factors, differences in rates of health insurance, primary care provider, and having had a yearly checkup were no longer statistically significant. Difference in rates of dental visits in the past year remained statistically significant, with transgender adults about half as likely as cisgender adults to have had a dental visit in the past year (AOR=0.55, 95% CI: 0.33–0.79) [**Table 2**].

Table 2. Gender identity and health among RI adults 2020–2024 (RI BRFSS)

	Unadjusted Prevalence			Adjusted Odds Ratio [AOR] (95% Confidence Interval [CI]) Model 1
	Transgender (N=8,733, 1.0%)	Cisgender (N=843,752, 99.0%)	P	
General Health				
Fair/Poor Overall Health	**32.6%**	**15.5%**	**<.0001**	**3.25 (1.94–5.46)**
Obese	33.8%	30.8%	.51	1.15 (0.75–1.76)
Disability				
Hearing	7.7%	6.4%	0.61	**3.80 (1.60–9.01)**
Vision	**11.9%**	**5.0%**	**.01**	**3.30 (1.49–7.32)**
Cognition (concentrating/ decision–making)	**38.6%**	**12.3%**	**<.0001**	**3.14 (2.01–4.93)**
Mobility (difficulty walking)	17.9%	12.1%	.12	**3.26 (1.81–5.86)**
Self–care (difficulty bathing/ dressing)	**8.6%**	**3.4%**	**.03**	**2.48 (1.31–4.69)**
Independent living (running errands)	**25.4%**	**7.1%**	**<.0001**	**3.14 (2.01–4.93)**
Any disability[a]	**54.4%**	**27.4%**	**<.0001**	**4.09 (2.63–6.38)**
Chronic disease				
Diabetes	**6.3%**	**11.3%**	**.03**	1.29 (0.79–2.39)
Asthma	**19.8%**	**12.5%**	**.02**	**1.73 (1.10–2.73)**
Cardiovascular disease	**5.1%**	**8.5%**	**.05**	1.78 (0.97–3.22)
Arthritis	**13.5%**	**26.9%**	**.0002**	1.29 (0.79–2.10)
Any chronic disease[b]	**35.8%**	**48.6%**	**.007**	**1.72 (1.13–2.61)**
Mental Health				
Frequent mental distress[c]	**44.5%**	**14.3%**	**<.0001**	**3.60 (2.38–5.45)**
Depression	**50.6%**	**22.3%**	**<.0001**	**2.98 (1.97–4.49)**
Often gets social/emotional support[d]	**58.0%**	**76.6%**	**.0001**	**2.06 (1.26–2.36)**
Health Behaviors				
Did not get any exercise	**39.4%**	**24.1%**	**.001**	**2.51 (1.53–4.12)**
Current cigarette smoker	9.7%	11.4%	.59	0.84 (0.43–1.63)
Binge drink (past 30 days)	14.0%	16.4%	.50	**0.55 (0.31–0.94)**
Current marijuana user	**33.8%**	**17.1%**	**<.0001**	**1.57 (1.01–2.45)**
Healthcare access				
Have insurance	90.8%	94.6%	.06	0.98 (0.51–1.89)
Had medical checkup in past year	**73.2%**	**84.0%**	**.003**	1.16 (0.66–2.03)
Have primary care provider	**82.2%**	**88.8%**	**.03**	0.76 (0.33–1.76)
Had dental checkup in past year	**55.2%**	**72.6%**	**.0003**	**0.55 (0.33–0.79)**

Notes: unadjusted p-values based on chi-square test - significant difference defined as p<.05 (indicated in bold red or green font). AOR from logistic regression adjusted for age and race/ethnicity

[a] Disability = any problems with hearing, vision, cognition or mental, mobility, self-care, or independent living. [b] Any chronic disease = history of cardiovascular disease, cancer, COPD, asthma, kidney disease, arthritis or diabetes. [c] Frequent Mental Distress = mental health not good for 14 or more days in the past 30 days, [d] Social/emotional support was not assessed in 2021

DISCUSSION

This study is among the first to evaluate disparities in health based on gender identity across the state of Rhode Island. The analysis used data from the RI BRFSS to obtain population-level measures of health and found that compared to cisgender adults, transgender adults were more likely to report poorer overall health, disability, poorer mental health, and some but not all types of chronic disease. These results were similar to those of other studies.[4-6,11,12]

Transgender adults in our study had more than three times the odds of reporting fair/poor overall health and more than four times the odds of having any disability compared with cisgender adults. They were also more than three times as likely to report frequent mental distress and nearly three times as likely to report a history of depression. The extent of these disparities is consistent with, and in some cases higher than, estimates reported in national analyses, which have shown approximately two times the odds of poor mental health, depression, and poor general health among transgender adults.[2,13]

Transgender adults were also more likely to report physical inactivity and marijuana use, with more than twice the odds of reporting no exercise in the past 30 days and nearly twice the odds of current marijuana use compared with cisgender adults. Prior national analyses have similarly documented disparities in physical activity, poorer health related quality of life, and higher prevalence of substance use among transgender adults.[4,7,13] These findings suggest that behavioral health disparities observed in Rhode Island are consistent with patterns reported in national analyses.

Encouragingly, after adjusting for confounders, transgender and cisgender adults had similar rates of health insurance, having a primary care provider, and having a medical checkup in the past year. These results differed from that of some other studies that had found transgender adults were at increased risk of poor healthcare access.[3,11] A recent multistate study found that transgender adults living in gender-affirming states were more likely to access preventive health care services and had fewer disparities than those living in gender non-affirming states.[14] Rhode Island is a gender-affirming state with laws protecting the LGBTQ+ community against discrimination and mandating equal access to health care; these factors may help the transgender community feel comfortable in seeking care.

These results demonstrate persistent and ongoing health disparities related to a wide range of health diseases and conditions in transgender individuals. There are several steps that clinics and healthcare professionals can take to improve access and help address these disparities.[15] Clinics should create welcoming and affirming settings. This includes correct use of pronouns and names, using gender-neutral language, and validating and affirming patients. Staff should be trained appropriately and in a culturally competent manner. Healthcare professionals should be aware of these disparities and intentionally screen individuals for health conditions that disproportionately impact these groups (i.e., HIV/STI testing in transgender women, mental health and suicidality screening for all transgender individuals). Patients should have access to gender-affirming care in their area. Access to behavioral health services is important. On a policy level, laws which support access to care for transgender individuals should be promoted. Safety-net programs, including access to healthcare, are critical for preventative care services.

This study has some limitations. First, the BRFSS is a self-reported survey and thus may be prone to recall, social desirability, and response bias. Some individuals may not feel comfortable disclosing their gender identity, leading to misclassification or an underestimate of the transgender population. Despite these limitations, this analysis provides valuable multi-year, population-based estimates of the health of transgender adults in the state. More research is needed to better understand health needs and improve the health of transgender adults in the state.

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Behavioral and Physical Health of LGBTQ+ Youth in Rhode Island: Implications for Clinical Care and Policy

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INTRODUCTION

Adolescents and young adults are shaped by intersecting developmental, social, and structural forces. For lesbian, gay, bisexual, transgender, queer, and other sexual and gender minority (LGBTQ+) youth, these forces often translate into disproportionate exposure to stigma, discrimination, and unmet health needs.[1-4] Nationally and in Rhode Island (RI), LGBTQ+ youth experience higher rates of depression, anxiety, suicidality, substance use, and victimization than their heterosexual and cisgender peers.[2,3,5-8] At the same time, strong evidence demonstrates that affirming families, schools, communities, and health care environments substantially improve outcomes.[4,9-11]

Rhode Island offers a unique context. The state has strong legal protections for LGBTQ+ people, including bans on conversion therapy and protections against discrimination targeting gender identity and sexual orientation. Yet, marked health disparities persist for LGBTQ+ youth. This commentary synthesizes available RI-specific data on the behavioral health of this population, supplemented by national evidence and clinical experience, to describe the size and characteristics of the LGBTQ+ youth population, summarize key health outcomes, identify protective factors, and highlight actionable opportunities for providers, school systems, health systems, and policymakers. A separate commentary in this issue will describe the policy landscape and implications for LGBTQ+ youth in RI.

LGBTQ+ YOUTH IN RHODE ISLAND: SIZE AND TRENDS

Population-based estimates of LGBTQ+ youth in RI primarily come from the Youth Risk Behavior Surveillance System[12,13] (YRBS), the RI Department of Education, and the UCLA Williams Institute[14] [**Table 1**]. YRBS data indicate that of the approximately 45,000 high school students in RI, about 19% (roughly 8,000) identify as LGBTQ+, including about 3.5% (roughly 1,500) who identify as transgender.[5] These estimates are comparable to national figures,[14] with RI reporting slightly lower overall LGBTQ+ prevalence but similar proportions of transgender youth. Over time, the proportion of youth identifying as LGBTQ+ has increased in RI and nationally.[15] For example, RI Department of Education estimates suggest LGBTQ+ identification rose from approximately 10% in 2016 to nearly double that figure in recent years.[16] While increased visibility and social acceptance likely contribute, limitations in earlier data collection—particularly the late inclusion of gender identity questions—make it difficult to determine whether observed increases reflect true population changes or improved measurement.

Importantly, available data likely underestimate transgender and nonbinary youth, as many surveys rely on single-item gender identity questions that exclude youth who are questioning or have nonbinary identities. Additionally, many youth use labels to describe their sexuality and gender beyond those commonly used in survey questions. However, a strength of the RI YRBS is its inclusion of "questioning" youth, both in sexual orientation and gender identity. At the same time, fear of stigma and safety concerns may further suppress disclosure, particularly among youth experiencing marginalization in other domains.[17]

Table 1. Rhode Island LGBTQ+ and transgender youth demographic characteristics by source

Source	Total LGBTQ+ Population: n (%)	Total Transgender Population: n (%)	Methodology/Sample
RI Department of Education (DOE) and Department of Health (DOH)[4]	10%	N/A	Synthesized data from CDC YRBS, RI Kids Count, DOH Surveillance
RI Youth Risk Behavior Surveillance System (YRBS)[1,2]	8021 (19%)	1503 (3.5%)	Data from 2021 and 2023 samples weighted to obtain statewide population estimates
UCLA Williams Institute[3]	6000	400	Combines own estimates with US Census and YRBS data to develop report

MENTAL AND BEHAVIORAL HEALTH OUTCOMES

Mental and behavioral health disparities are among the most striking inequities facing LGBTQ+ youth in RI. State and national data consistently show elevated rates of anxiety, depression, and suicidality compared with heterosexual and cisgender peers.[1-4,6,8,12,15,18-21] In RI, over half of LGBTQ+ youth report symptoms of anxiety or depression. Compared to heterosexual youth, gay/lesbian/bisexual and queer/questioning youth have much higher rates of seriously considering suicide (H: 26%, LGB: 60%, Q/Q: 71%) and attempting suicide (H: 6%, LGB: 17%, Q/Q: 20%) Rates are also substantially higher among transgender and nonbinary youth when compared to cisgender youth. More than one in two transgender youth in the state has seriously considered suicide, and more than one- third concerning proportion report suicide attempts, compared to 14% and 8% of cisgender youth.[6] Similar trends are seen at the national level.[12,13]

These outcomes are strongly shaped by social context. Only about 43% of transgender and nonbinary youth in RI describe their home as affirming,[8] and family rejection is a powerful predictor of poor mental health outcomes and suicidality.[22,23] Conversely, access to gender-affirming care—including mental health services, family-based interventions, and social affirmation—has been associated with improved psychological wellbeing.[24,25] Despite high need, access to mental health care remains limited. More than one-third of RI LGBTQ+ youth who sought mental health services in the past year were unable to obtain them.[8] Common barriers include fear of involuntary hospitalization, cost, lack of affirming providers, and concerns about privacy—particularly when care is delivered virtually. Conversion therapy, defined as efforts to change an adolescent's actual or perceived gender identity, gender expression, or sexual behavior, is known to cause severe psychological distress, depression, substance abuse, and suicidality among LGBTQ youth.[26,27] It is present, but fortunately not common in RI. Seven percent of LGTBQ+ young people in RI report being threatened with conversion therapy and 3% were subjected to conversion therapy, despite the practice being legally banned in the state.[8]

PHYSICAL HEALTH, SUBSTANCE USE, AND SAFETY

LGBTQ+ youth in RI also experience disparities in physical health outcomes that reflect heightened exposure to stress, violence, and discrimination. Bullying and victimization remain pervasive among LGBTQ+ youth, and some disparities vary by sexual orientation and gender identity.[6] For example, in RI, more than one-third of transgender youth report in-person bullying, and over 40% report online harassment.[5] These experiences are associated with absenteeism, substance use, psychological distress, and increased risk of injury.[28] Transgender youth also report struggling with substance use—specifically alcohol, marijuana use, and vaping nicotine—compared to cisgender peers,[29] patterns that mirror national findings among sexual minority compared to heterosexual youth.[30] For example, prevalence of current marijuana use was higher among gay, lesbian, and bisexual students (32.0%) than heterosexual students (20.7%).[30] However, in this same study, no differences were seen in behaviors related to birth control, nutrition, or physical activity between heterosexual versus gay, bisexual, and lesbian youth.[31]

SEXUAL AND REPRODUCTIVE HEALTH EDUCATION

Comprehensive, inclusive sexual and reproductive health (SRH) education is essential for LGBTQ+ youth,[32–34] yet remains inconsistent.[35] Most RI high schools report covering gender identity and sexual orientation, but fewer provide LGBTQ+-inclusive education on HIV, sexually transmitted infections, and pregnancy prevention.[35] Available data are limited by reliance on district self-report and do not assess instructional quality or student outcomes. Gaps in inclusive SRH education leave many LGBTQ+ youth without accurate, relevant information, increasing vulnerability to adverse sexual health outcomes and reinforcing stigma.[34,36] Improved monitoring and evaluation of SRH education—including student-centered assessments—are needed at the district and state level to ensure curricula are comprehensive and inclusive, health teachers are comfortably and confidently implementing the curricula, and the instruction translates into meaningful knowledge and skills for all youth.

ACCESS TO AND EXPERIENCES WITH HEALTH CARE

Direct RI-specific data on health care experiences among LGBTQ+ youth are limited, but existing evidence suggests mixed progress. Barriers to care operate at multiple levels: individual fears of disclosure, interpersonal discrimination, insufficient provider training, limited availability of affirming services, insurance gaps, and broader societal stigma.[37] Experiences of discrimination remain common, as nearly two-thirds of LGBTQ+ youth in RI report mistreatment in school related to sexual orientation or gender identity.[6,12] Discrimination is independently associated with poorer physical and mental health outcomes, even after accounting for socioeconomic factors.[38] Analyses of RI claims data indicate that transgender adolescents receive preventive services at rates comparable to or higher than cisgender peers, though often outside traditional primary care settings.[39] Addressing these barriers requires coordinated, multilevel strategies.

INTERSECTIONAL DISPARITIES

Intersectionality provides a critical framework for understanding how overlapping systems of oppression intensify health inequities.[40] Although RI-specific data are sparse, national evidence indicates that LGBTQ+ youth who are also youth of color, immigrants, or from low-income backgrounds experience compounded disparities.[41-44] Studies show that LGBTQ+ youth of color face higher levels of school hostility, reduced access to mental health services, and greater unmet health needs than White LGBTQ+ peers.[45] These patterns likely extend to RI, underscoring the urgency of collecting and analyzing disaggregated data by race, ethnicity, gender identity, and socioeconomic status to guide equitable interventions. Affirming peer and adult support, including communities formed through online and virtual spaces, may be especially critical for youth with intersecting marginalized identities who often face reduced access to in-person supports and thus rely more heavily on alternative networks to buffer compounded stress.[46]

PROTECTIVE FACTORS AND RESILIENCE

Despite elevated risks, LGBTQ+ youth demonstrate remarkable resilience when supported by affirming environments. Family acceptance is among the strongest protective factors, associated with lower rates of depression, substance use, and suicidality.[47–49] Yet, fewer than one-third of RI LGBTQ+ youth report high levels of family support, with even lower rates among transgender youth.[50] Schools and communities also play a critical role. LGBTQ+-affirming school policies, supportive staff, inclusive curricula, and access to Gender and Sexuality Alliances (GSAs) are associated with improved academic and mental health outcomes.[51] In RI, fewer than half of LGBTQ+ youth describe their schools as affirming, highlighting significant room for improvement.[52]

Community-based organizations and online spaces also provide vital support, fostering belonging and identity affirmation. For example, Youth Pride (https://www.youthpride ri.org/) and local PFLAG chapters (https://pflag.org/find-achapter/), offer direct services such as peer support groups, youth programming, and family counseling. These organizations help foster a sense of belonging and safety for LGBTQ+ youth, which is essential for their mental and emotional development. While online communities can mitigate isolation—particularly for transgender youth[46]—they also can expose youth to harassment,[53] reinforcing the need for digital literacy and safety initiatives.

IMPLICATIONS FOR POLICY AND PRACTICE

Closing health equity gaps for LGBTQ+ youth in Rhode Island requires coordinated action across systems. Recent anti-LGBTQ+ policies at the local, state and national level are not evidence-based and will only worsen health outcomes and equity in this population.[54,55] Priority strategies include: 1) **Expanding access to affirming mental health care**, including insurance coverage, workforce development, and youth-centered telehealth models; 2) **Improving provider education and clinical training** on LGBTQ+ youth health and gender-affirming care; 3) **Strengthening data collection**, including routine, disaggregated sexual orientation and gender identity measures; 4) **Enhancing school-based supports**, such as inclusive SRH education, establishing and providing adequate funding for Gender and Sexuality Alliances (GSAs), and anti-bullying policies; and 5) **Investing in families and communities**, particularly programs that promote acceptance and culturally responsive care.

Rhode Island has a strong foundation of legal protections and community assets. Leveraging these strengths—while addressing persistent gaps—offers a clear opportunity to improve the health and wellbeing of LGBTQ+ youth statewide.

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Strategies, Policies, and Practices to Support the Health of LGBTQ+ Youth in Rhode Island

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INTRODUCTION

Adolescence and young adulthood represent a critical developmental period for lesbian, gay, bisexual, transgender, queer, and other sexual and gender minority (LGBTQ+) people.[1] During this stage, young people undergo profound physical, emotional, cognitive, and social development, including identity formation, increasing autonomy, and transitions across educational, health care, and social systems. Optimal health across the lifespan—including for LGBTQ+ populations—cannot be achieved without sustained attention to health and wellbeing before adulthood. This requires that youth have access to developmentally appropriate and affirming health care services, are supported by trusted adults in their families, schools, and communities, and are provided with safe opportunities to learn, grow, and thrive.[2,3] An article in this issue describes the epidemiology and health outcomes of LGBTQ+ youth in Rhode Island (RI).[4] Building on that foundation, the present commentary focuses on the systemic barriers and facilitators shaping health for LGBTQ+ adolescents and young adults (AYA) in the state, with particular attention to gender-affirming care, LGBTQ+-competent health care services, research and access to data on LGBTQ+ AYA health, and K–12 school-level policies and practices relevant to this population.

GENDER-AFFIRMING CARE FOR YOUTH

Gender-affirming care (GAC)—developmentally-appropriate care oriented toward understanding and appreciating people's gender experience ideally delivered by a multi-disciplinary team[5,6]—is an evidence-based practice supported by all major U.S. medical organizations—including the American Academy of Pediatrics, the Endocrine Society, and American Medical Association.[5,7,8] One plastic surgery group signaled concerns about surgery in minors[9]—procedures that are rare[10]—but further examination suggests this effort was led by a very small number of members and does not reflect the consensus of the organization.[11,12] GAC for youth encompasses a broad range of care that may include one or more of the following, depending on the age of the patient: social affirmation, puberty- blocking medications, cross-sex hormone therapy, gender-affirming surgery, and/or legal affirmation.[5,6] A growing body of literature links access to GAC with improved mental health outcomes for transgender youth, including reduced depression and suicidality.[5,7,13]

Despite this evidence and clinical consensus, GAC for youth is facing unprecedented political and legal attack nationally, including efforts to intimidate clinicians and pressure hospitals to curtail or close programs, with ripple effects even in states with stronger protections.[14–16] Across the U.S., an expanding patchwork of restrictive policies has narrowed access to care for minors and increased legal risk for clinicians; these restrictions have affected a substantial proportion of transgender youth and have discouraged providers from offering GAC.[14,15] Supporters of these initiatives have raised concerns about the perceived overuse of gender-affirming surgical procedures and hormonal interventions among transgender and gender diverse minors; however, research indicates these occurrences are rare[10,17] and align with the current standards of care.[6,7]

RI has historically maintained legal protections for LGBTQ+ communities,[18-21] but proposals seeking to restrict or penalize provision of GAC to minors are introduced repeatedly, requiring ongoing policy vigilance.[22] Even in states like RI where youth have access to GAC, the current national climate carries measurable consequences for gender- diverse youth wellbeing. In RI, many gender-diverse youth receiving hormones worry about losing access to medically necessary care.[23] Exposure to anti-transgender rhetoric and legislation is associated with worsened mental health and stress-related outcomes among gender-diverse people, and these harms are not confined to states that pass restrictive laws.[24] Consistent with this broader pattern, a majority of RI LGBTQ+ youth report that the current political climate has had a large negative impact on their wellbeing.[23,25] Protecting access to GAC for youth is not only a legal or ethical issue, it is a population mental health issue. RI's clinical infrastructure and policy posture can mitigate harm, but only if access is stable, enforceable, and paired with a trained workforce and affirming systems.

ACCESS TO LGBTQ+-COMPETENT HEALTH CARE

Culturally competent care for LGBTQ+ youth includes care that is affirming, non-stigmatizing, and attentive to the social and structural conditions that shape health and access.[26] Yet, many clinical environments still lack basic competencies—such as correct names/pronouns, affirming intake processes, and trained staff—leading youth to delay care, disengage, or avoid health systems altogether.[27] This is particularly concerning, given that over 300,000 youth ages 13–17 in the U.S. identify as transgender or gender diverse.[28]

Provider training gaps remain substantial. For example, a large share of physicians report no formal training in sexual minority health, and even in settings where training exists, many clinicians judge it inadequate.[29] More recent national surveys similarly describe low rates of LGBTQ+ youth-focused training among clinicians and staff, alongside persistent fear of discrimination and distrust of health systems among LGBTQ+ patients—barriers that directly undermine timely preventive care and chronic disease management.[30,31] Nearly one-quarter of transgender Rhode Islanders who accessed care reported at least one negative experience related to being transgender, including refusal of care or harassment.[32]

RI has taken steps to expand affirming care environments, such as "Safe Zone" certifications available to provider organizations statewide through Blue Cross and Blue Shield (https://www.bcbsri.com/safezones).[33] However, voluntary signaling programs do not substitute for standardized, accountable clinical expectations, and their governance and training depth may vary.[34] For youth without reliable transportation, stable insurance, or family support, the presence of a limited number of "affirming" sites can still translate into practical inaccessibility. RI should treat LGBTQ+ competence as a baseline quality standard—embedded in clinical operations, workforce development, and reimbursement models—rather than as optional, self-selected training.

TRAINING THE NEXT GENERATION OF LGBTQ+-COMPETENT PROVIDERS

Best-practice recommendations exist for preparing mental health clinicians to provide LGBTQ+-competent care, which can be adapted to other health professions.[35] RI's legal environment and clinical assets create a strong platform for health professions' education, particularly in pediatrics and adolescent medicine, where clinicians must navigate confidentiality, family dynamics, school contexts, and rapidly changing policy landscapes.

Training needs are especially urgent in mental health care, where demand continues to exceed capacity. National data indicate that most LGBTQ+ youth desire mental health care but many cannot access it.[23] In RI, a substantial proportion of LGBTQ+ youth who wanted mental health care did not receive it, citing barriers such as fear of discussing concerns, worries about involuntary hospitalization, and cost.[23] Even when youth locate care, inadequate LGBTQ+-specific training can lead to invalidation or frayed trust, discouraging further help-seeking and worsening untreated distress. These concerns are amplified by the persistence—despite bans and broad professional repudiation—of "conversion therapy" narratives and practices that continue to shape some clinical interactions.[36,37]

We recommend the following four health care worker education and workforce strategies, which are possible even in constrained environments: 1) **Integrate LGBTQ+ health longitudinally**: Embed content across core courses and clinical training rotations so competence is reinforced by repetition and practice; 2) **Use scalable resources**: Supplement local instruction with virtual modules and continuing education from reputable organizations to standardize baseline competencies; 3) **Create accountability**: Require demonstrated skills (not just attendance) in affirming communication, documentation, confidentiality, and referral pathways; and 4) **Protect learners and faculty**: Establish support structures and clear institutional expectations for inclusive clinical learning environments, particularly during periods of political hostility. RI's ability to maintain affirming services depends on a pipeline of clinicians who are trained, supervised, and supported to provide evidence-based care.

RESEARCH AND ACCESS TO LGBTQ+ YOUTH HEALTH DATA

LGBTQ+ health research and data systems have become targets of federal action, with efforts to terminate or redirect grants and to restrict public access to LGBTQ+-relevant datasets.[14,38,39] These actions carry local consequences, including threats to RI's research enterprise and broader life-sciences ecosystem.[40,41] Beyond funding, attempts to restructure how federal grants are announced and awarded raise concerns about politicizing science and weakening peer review.[42] Federal data systems matter for RI because they anchor surveillance, benchmarking, and needs assessments of health outcomes for youth across the state. For example, the Youth Risk Behavior Surveillance System (YRBS) is foundational for adolescent health monitoring nationally and at the state level.[43] Efforts to remove or limit YRBS access undermine public health planning far beyond LGBTQ+ topics, affecting injury prevention, substance use surveillance, and mental health monitoring.[44] In response, independent preservation efforts have emerged, including digital archives designed to maintain access to LGBTQ+-related public information and resources (e.g., https://www.thelgbtqarchive.org/).[44,45] RI stakeholders should continue to treat LGBTQ+ data infrastructure as essential public health programing by protecting data availability, investing in state-level measurement, and preserving questions about sexual orientation and gender identity.

SCHOOL-LEVEL CHALLENGES AND RECOMMENDATIONS

Youth spend nearly as much of their time in school as not, and like any setting, schools can be a place where students' personhood is affirmed or marginalized. While a comprehensive review and summary of school-level barriers and facilitators to LGBTQ+ youth health is beyond the scope of this review, several excellent reviews of this topic have been published recently.[46-49] Whether public, private, or parochial, K–12 schools in RI can take active steps informed by evidence to promote the health and wellbeing of LGBTQ+ youth, some of which are summarized with examples and resources in **Table 1**.

Table 1. Resources for schools and educators to promote LGBTQ+ youth health and wellbeing

Category	Description	Links to Resources
Youth of Color	Attend to intersectional marginalization of students, such as Black LGBTQ+ students, through initiatives like policies on responding to racist and anti-LGBTQ+ behavior from peers or school staff	• GLSEN
Professional Development	Provide teachers and staff with meaningful professional development related to working with LGBTQ+ youth	• GLSEN • HRC Foundation's Welcoming Schools • Advocates for Youth • National Education Association (NEA)
Gender-Sexuality Alliances	Provide and support optional opportunities for LGBTQ+ students to gather and build community, such as Gender and Sexuality Alliances (GSAs)	• Youth Pride Inc • GSA Network • GLSEN
Inclusive Curricula & Spaces	Provide inclusive curricula, such as a) teaching about the history of LGBTQ people in the US, b) comprehensive sexual health education that is engaging and relevant to all students (not just heterosexual or cisgender students) and c) access to physical education and athletic activities consistent with their gender identity.	• RIDE guidelines on supporting gender diverse students • Queer History of the United States for Young people • Amaze.org • Planned Parenthood Curriculum • Advocates for Youth 3Rs Curriculum • Our Whole Lives (OWL)

POLICY PROTECTIONS IN RI AND WHY THEY MATTER

RI's policy environment is comparatively protective, including anti-discrimination statutes, youth protections (including a ban on conversion therapy for minors), and policies supporting gender identity recognition.[50] State-level protections are increasingly important as federal actions and interstate legal conflicts expand. A major recent example is RI's Health Care Provider Shield Act (S2262/H7577), enacted in June 2024, which aims to protect clinicians and patients involved in lawful gender-affirming and reproductive health care from out-of-state legal actions and related coercive processes.[21] This type of legal protection is designed to stabilize access, reduce provider fear, and preserve confidentiality in a fragmented national environment.

Policy protections are not merely symbolic. Evidence suggests that state conversion therapy bans are associated with reductions in adolescent suicidality, with larger effects among LGBTQ+ youth.[51] In other words, legal protections can translate into measurable population mental health benefits. RI should continue to pair legal protections with implementation by enforcing laws and regulations on insurers, health systems and providers, schools, and professional boards align practice with protections, and that youth can actually access health care allowed by law.

CONCLUSION

For RI's LGBTQ+ youth—especially transgender and nonbinary youth—health outcomes are strongly shaped by whether providers and systems deliver evidence-based care in affirming environments, supported by stable policy protections and robust data infrastructure. GAC improves mental health for many youth and is supported by major medical organizations, yet national attacks threaten access and amplify distress even in protective states.[13,24,51] RI providers and policy makers can respond with a coherent strategy: protect access to care through insurance regulation and provider protection, standardize LGBTQ+ clinical competence as a quality expectation, expand workforce training (especially in mental health), and defend the data systems needed to monitor and improve outcomes. Where protections are strong, our leaders can implement them; where gaps persist, we can close them with policy and practice aligned to evidence.

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Strengthening Health and Aging Services for LGBTQ+ Older Adults in Rhode Island

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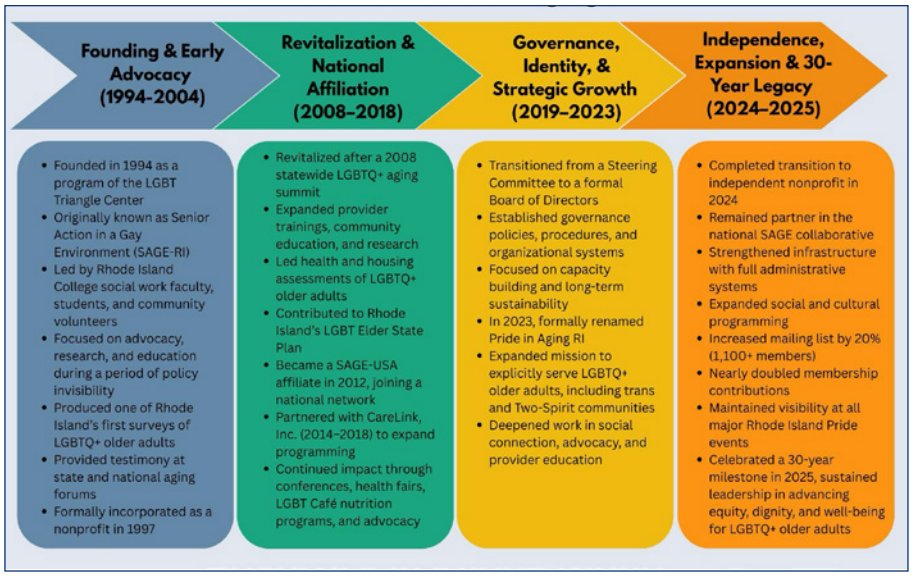
INTRODUCTION

Lesbian, gay, bisexual, transgender, and queer (LGBTQ+) older adults represent one of the fastest-growing aging communities in the United States, with an estimated three million adults aged 65 and older identifying as LGBTQ+, a number expected to double by 2060.[1] Despite this growth, LGBTQ+ older adults experience distinct health and aging inequities shaped by lifelong exposure to stigma, discrimination, and systemic exclusion, differentiating them both from younger LGBTQ+ adults and heterosexual, cisgender peers.[1-3] These experiences are associated with higher rates of chronic illness, mental health concerns, social isolation, and avoidance of healthcare and senior services, with invisibility often functioning as an adaptive response to non-affirming environments.[4-6]

In Rhode Island, community-level data indicate that LGBTQ+ older adults face limited access to identity-affirming aging and healthcare services, with few senior centers or providers offering targeted or inclusive programming, contributing to unmet needs and increased risk of hospitalization and premature institutionalization.[7-9] Community-based research and practice initiatives led by Pride in Aging Rhode Island (PIARI) have documented these gaps while generating community-informed expertise that can be translated into practical guidance for healthcare and aging service professionals.[10] This underscores the critical role of nonprofit organizations in reducing isolation, building provider capacity, and advancing culturally responsive, person-centered care for LGBTQ+ older adults within Rhode Island's healthcare systems. Given these persistent disparities and gaps in identity-affirming services, there is a need to examine strategies for improving health, social support, and services for LGBTQ+ older adults in Rhode Island.

Since 1994, PIARI (formerly SAGE-RI) has worked to ensure that LGBTQ+ older adults in Rhode Island are seen, supported, and empowered. Through social programming, community partnerships, and statewide education efforts, the organization works to ensure that LGBTQ+ older adults have access to affirming services, supportive environments, and opportunities to participate fully in decisions that affect their lives. PIARI has served as a leading voice for LGBTQ+ older adults. Rooted in research and community engagement, the organization has collaborated with agencies such as the Rhode Island Foundation, the Office of Healthy Aging, Carelink, and numerous academic, nonprofit, and healthcare partners to provide social programs that reduce isolation, deliver high-quality, cultural competence training to healthcare and aging professionals, and ensure LGBTQ+ older adults can access safe, affirming services. Over the past 30 years, PIARI has grown from a small volunteer effort into a statewide leader supporting LGBTQ+ older adults. Today, PIARI continues this legacy through intergenerational programs, community cafés, educational initiatives, and advocacy that promotes equitable access to culturally responsive care. Drawing on 30 years of LGBTQ+ older adult advocacy in Rhode Island [**Figure 1**] —and emerging LGBTQ+ older adult health research—this commentary weaves together PIARI Board's collective wisdom to highlight actionable, community-informed strategies for strengthening aging services, supports, and systems to advance health, well-being, and inclusion statewide.

Figure 1. 30 Years of LGBTQ+ Aging Advocacy in Rhode Island: A Timeline of Pride in Aging RI



PATHWAYS TO STRENGTHEN LGBTQ+ OLDER ADULT HEALTH IN RHODE ISLAND

Advancing Visibility Through LGBTQ+-Affirming Aging Environments

Many older adults served through PIARI lack children or family members to advocate for them, and may be less positioned to self-advocate within healthcare, housing, and long-term care systems that continue to presume heterosexuality and cisgender identity. As LGBTQ+ older adults age, social networks often contract due to illness, loss, or mobility limitations, making intentional community connection increasingly vital.[11,12] PIARI's work reinforces that effective support must be *relational* rather than solely programmatic, rooted in trust, visibility, and belonging for LGBTQ+ older adults. In Rhode Island, the limited number of LGBTQ+-affirming programs and services makes this relational approach essential to prevent social isolation and ensure LGBTQ+ older adults feel recognized and supported statewide. There is a critical need for LGBTQ+-affirming senior centers, adult day programs, assisted living settings, and dementia-capable services across the state. Implementation of LGBTQ+-affirming environments within such services can help close existing service gaps, and even create a model for other states seeking to improve LGBTQ+ aging equity.[13]

Addressing Ageism and Advocacy Fatigue Through Intergenerational Solidarity

There is a pervasiveness of ageism both in broader society and within LGBTQ+ communities themselves, resulting in a widening generational divide, as the lived experiences of older LGBTQ+ adults (shaped by eras of criminalization, concealment, and survival) often differ sharply from those of younger LGBTQ+ people.[14-16] This disconnect can lead to diminished interest and investment in LGBTQ+ older adult issues, leaving LGBTQ+ older adults feeling marginalized even within spaces meant to serve them.[17] Persistent ageism, combined with limited capacity, energy, and people power, can make sustained advocacy feel like a losing battle. Strengthening intergenerational connections in Rhode Island's LGBTQ+ community is critical to build resiliency among LGBTQ+ older adults while energizing younger advocates, creating sustainable local networks that support both social inclusion and advocacy. Intergenerational engagement strategies that honor LGBTQ+ older adult leadership, preserve community memory, and renew shared responsibility for LGBTQ+ aging equity is a critical priority for LGBTQ+ older adult health care.[18] Rhode Island's smaller population and concentrated services mean that such community cohesion can directly influence older adults' access to affirming care and social support.

Building Intersectional and Cross-Sector Approaches to LGBTQ+ Aging Equity

There is no single LGBTQ+ aging experience; rather, later life is shaped by intersecting identities related to race, ethnicity, gender identity, disability, immigration history, socioeconomic status, and HIV status, alongside cumulative exposure to stigma across the life course.[19-21] PIARI has witnessed how policy and systems-level gains—such as explicit protections for same-sex partners in long-term care, inclusion of sexual orientation and gender identity data in assessments and state planning, and mandated cultural competency training—have meaningfully increased visibility and safety, even as these gains remain inconsistent and politically vulnerable.

Moreover, recent federal political actions in the United States have directly targeted members PIARI serves, including transgender, gender non-conforming, and immigrant LGBTQ+ older adults—severely impacting their sense of safety, access to care, and overall health.[22-24] Cross-sector collaborative efforts are urgently needed during this time to help ensure that LGBTQ+ older adults feel safe in Rhode Island. There remains a critical need for wider networking and stronger partnerships among aging services, healthcare systems, housing providers, behavioral health organizations, assisted-living and nursing home facilities, and LGBTQ+ community organizations to ensure affirming and sustainable support for LGBTQ+ older adults throughout the state, particularly those who are the most targeted by violent federal policies.

CONCLUSION

Three strategies have been identified as key pathways to strengthen the LGBTQ+ aging community: increasing visibility through LGBTQ+-affirming environments, fostering intergenerational solidarity and advocacy, and building cross-sector approaches to LGBTQ+ equity. The Rhode Island medical community is uniquely positioned to champion these strategies through both individual and collaborative action. Deepening visibility and awareness of LGBTQ+ older adults, cultivating an ethos of welcome and belonging in care, and advancing affirming healthcare environments are vital to supporting LGBTQ+ older adults.[25,26] More robust state-level data on LGBTQ+ older adults in Rhode Island is also critically needed to inform coordinated service response and respond to the needs of the community—especially amid heightened political and social challenges.

Since its founding in 1994, PIARI has evolved to meet the changing needs, strengths, and resilience of LGBTQ+ older adults. Rhode Island's close-knit communities provide a strong foundation for building intergenerational opportunities and networks that celebrate and honor the experiences of LGBTQ+ older adults while energizing the next

generation. Fostering intergenerational engagement in programming also offers a promising strategy to combat ageism, as multigenerational knowledge-sharing and chosen families remain central to LGBTQ+ aging, especially among transgender, Black, Indigenous, and other BIPOC same-gender-loving communities.[27,28]

In the nation's smallest state, Rhode Island's medical community—working alongside PIARI—is strategically positioned to lead LGBTQ+ older adult health equity by leveraging its more centralized, coordinated health systems to address disparities across both rural and urban communities. This proximity also makes it more feasible to build and sustain cross-sector partnerships across aging services, healthcare, housing, and policy systems, supporting relationship-based action. At the policy level, advancing LGBTQ+ aging equity in Rhode Island requires aligning statewide strategies, particularly with organizations such as the Rhode Island Office of Healthy Aging, Rhode Island Department of Health, Executive Office of Health and Human Services, and Behavioral Healthcare, Developmental Disabilities & Hospitals to support inclusive, coordinated, and sustainable approaches. By continuing to build visibility, foster intergenerational connections, and strengthen cross-sector collaborations, Rhode Island can create a sustainable, inclusive aging ecosystem that meets the evolving needs of LGBTQ+ Rhode Islanders, and serve as a model for other states, now and into the future.

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In 2025, Attacks on LGBTQ+ People's Civil Rights and Access to Healthcare Reshaped the US and Medical Professions

ANGELA KEMP, MSW; RYAN FONTAINE, BS

Reports by The Trevor Project and Movement Advancement Project (MAP) show a mass migration underway in the United States by LGBTQ+ youth, their families, and LGBTQ+ adults.[1,2] It's no wonder when you consider that year-over-year increases through the last decade culminated in the American Civil Liberties Union tracking over 600 bills introduced in United States (US) state legislatures in 2025 that would discriminate against LGBTQ+ people.[3] MAP's equality map showed 27 states, and three US territories are no longer safe for LGBTQ+ people.[4]

Rhode Island is not immune from this legislative onslaught. Proposals from curriculum censorship to bathroom and healthcare bans have all been heard in the committee rooms at 82 Smith Street. The difference is that these proposals are defeated year after year, while those that do advance have positioned Rhode Island among the 15 states offering the most civil rights protections for LGBTQ+ people in the US.[4] Similarly, local communities continue to reject efforts to make our schools unsafe for LGBTQ+ students.[5] Anecdotally, medical professionals and supportive agencies can tell you that, because of Rhode Island's civil rights' protections, many LGBTQ+ people and their families fleeing their home states are coming to Rhode Island.

What happens when these attacks are no longer escapable by crossing state borders? We are finding out in real time as the project to restrict the civil rights of LGBTQ+ people reached new heights in 2025. Passage of the 2025 National Defense Authorization Bill containing restrictions on healthcare for the transgender dependents of military service members in December 2024 set the stage for the year to come.[6] A wave of anti-LGBTQ+ stand-alone bills, and countless riders washed up in the 119th session of the US Congress. Only a new round of sports restrictions for transgender people in military academies in the 2026 National Defense Authorization Act prevailed, but the 119th session is ongoing.[7]

More immediate and devastating actions flowed from the executive branch. Nearly as quickly as he took the oath of office, Donald Trump began issuing executive orders to end-run the legislative process, override state laws, and enforce discriminatory policies across the country. Resulting agency actions have removed LGBTQ+ health data; erased LGBTQ+ people from federal programs; twisted civil rights law to discriminate against LGBTQ+ people; restricted the ability to obtain accurate identity documents; and defunded programs and institutions based on their acknowledgment LGBTQ+ people even exist.[8,9] Immediate legal challenges have successfully impeded many of these discriminatory actions.[9] However, the Supreme Court of the United States (SCOTUS) reached down in two pending lower court cases, allowing the bans on transgender people in the military and accurate passports for transgender people to take effect.[9] Additionally, 2025 SCOTUS merits' decisions allowed state bans on best-practice medical care for transgender young people and religious intolerance for LGBTQ+ inclusive curricula in K-12 schools.[10] More cases impacting LGBTQ+ rights will be decided by SCOTUS in 2026.

Federal actions targeting LGBTQ+ people for unequal treatment were so numerous in 2025 that entire databases were established to monitor these actions. It is impossible to concisely summarize these events in a single article. This onslaught has put transgender people and the entire practice of medicine in dire straits. In May 2025, HHS published "Treatment for Pediatric Gender Dysphoria." The conclusions of this attempt to rewrite the standards of care were foregone—reject medical consensus and consistent evidence for gender-affirming care and push psychotherapy as a de-facto attempt to stop young people from being transgender. Breaking all scientific norms, the authors and peer reviewers of the HHS report were not made public until almost seven months after its release. Not a single expert in healthcare for transgender young people was among them.[11]

Also in 2025, federal agencies subpoenaed 20 hospitals seeking to obtain the detailed medical records of transgender adolescents and their medical professionals; threatened states that provide health insurance coverage for necessary healthcare to transgender people under age 18 or 19; used multiple levers of power to threaten healthcare professionals providing necessary healthcare to transgender young people; and platformed the worst anti-LGBTQ bigotry that pales in comparison during the first Trump administration.[8]

The worst was yet to come by year's end. During the summer, it became public knowledge that the Centers for Medicare and Medicaid (CMS) was preparing two proposed rules restricting access to essential medical care for transgender young people. On December 19th, the published full text revealed the intent to prevent federal Medicaid dollars from being used to cover medical transition for anyone under 18,

or under 19 for Children's Health Insurance Program recipients, and to stop hospitals from providing medical transition care to anyone under 18, regardless of payor source, by threatening their participation in Medicare and Medicaid. A declaration from the US Secretary of Health and Human Services accompanied these rules, effectively attempting to bypass the federal rulemaking procedures to immediately begin excluding healthcare professionals and systems that provide transgender healthcare to young people from federal health programs. All these actions are based on circular references to the HHS Report, England's discredited NIH Cass Review, and limitations on care enacted by a scant few European countries, in direct contradiction to the best medical evidence.[8]

To be clear, at the time of this writing, essential medical care for transgender people of any age is still legal federally and in many states. Countless lawsuits are challenging the discriminatory actions by the federal government, including nearly 50 brought by the Rhode Island Attorney General.[12] These cases, by and large, have been successful in putting these discriminatory actions on hold while litigation proceeds.[9] That has not been enough to stop the harm as agencies and healthcare systems dependent on federal funding are pressured into pre-compliance, even in Rhode Island and other protective states. Whether those withdrawals of care are permissible under the laws of supportive states will soon be tested in state courts.[13]

The implications for medical professions extend well beyond the direct care to LGBTQ+ people, with the potential to entirely reshape medical practice. As seen with the national reports cited above, the effects on LGBTQ+ people will be felt more strongly along class lines. Those who can leave discriminatory states, the country, or access care through private clinics not under threat will have a buffer not available to many others. LGBTQ+ people are shown to experience economic hardship due to persistent discrimination and, as a result, rely on supportive government services at higher rates than straight, cisgender people.[14] That is an impossible position when the government's policies seek to exclude LGBTQ+ people, while authorizing and attempting to regulate private individuals and institutions to do the same.

Now is the time to engage with our state and local leaders to demand Rhode Island remain a place where everyone is treated with equal dignity under the law. The medical community has proved a powerful force in the Ocean State, like with the swift passage of the 2024 Health Care Provider Shield Act.[15] Connect with your professional associations and the many local organizations and volunteer groups supporting this work, including LGBTQIA+ Action Rhode Island, The Womxn Project, GLBTQ Legal Advocates and Defenders, Planned Parenthood Votes RI, ACLU RI, and others to ensure Rhode Island's state motto of Hope continues to apply to everyone.

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Simultaneous Patellar, Quadriceps, and Triceps Tendon Ruptures in a Professional Male Bodybuilder After Low-Impact Trauma

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ABSTRACT

BACKGROUND: Simultaneous rupture of multiple major tendons is exceedingly rare and is typically associated with high-energy trauma or underlying systemic disease. This report describes the management and outcome of an unusual low-energy, three-tendon rupture involving the quadriceps, patellar, and triceps tendons in a professional bodybuilder.

CASE: A 36-year-old male professional bodybuilder presented after slipping on ice with acute loss of bilateral knee extension and right elbow extension. Physical examination and imaging confirmed complete rupture of the left quadriceps tendon, right patellar tendon, and right triceps tendon. The patient underwent single-stage surgical repair of all three tendons, utilizing transosseous fixation for both knee tendons and a suture anchor construct for the triceps tendon, followed by a tailored rehabilitation protocol. Functional and radiographic outcomes were assessed over one year. At one year, the left quadriceps and right triceps demonstrated a full range of motion and strength, allowing the patient to return to work without limitation. Imaging of the right patellar tendon demonstrated proximal tendon discontinuity and patella alta, consistent with repair failure. Despite this, the patient maintained 5/5 quadriceps strength, intact straight leg raise, and reported no limitations in daily activities, likely due to compensatory stabilization from an intact retinaculum. Revision surgery was recommended but deferred.

CONCLUSION: This case demonstrates that simultaneous multi-tendon rupture can occur after low-energy trauma in the absence of identifiable systemic disease. Early clinical suspicion supported by imaging and coordinated surgical and rehabilitative management can yield meaningful functional recovery, even in the presence of radiographic failure.

LEVEL OF EVIDENCE: IV

KEYWORDS: Quadriceps tendon rupture; Patellar tendon rupture; Triceps tendon rupture; Low-energy trauma; Tendon repair

INTRODUCTION

Tendon ruptures are typically isolated injuries associated with age, activity, or trauma severity. Quadriceps tendon ruptures most commonly occur in patients over 40 years of age and are often associated with underlying degenerative changes.[1-3] In contrast, patellar tendon ruptures are more common in younger active individuals during sports activities involving eccentric loading of the flexed knee, such as jumping.[1,2,4] Triceps tendon ruptures are rare and most often occur following a fall on an outstretched hand or via direct elbow trauma.[5-7] While isolated ruptures of these tendons are well-described, simultaneous rupture of multiple tendons is exceedingly rare and generally requires high-energy trauma. The occurrence of combined upper and lower extremity tendon ruptures following low-energy mechanisms is particularly unusual and has rarely been reported in the literature. We present a rare case of grade 3 ruptures of the left quadriceps, right patellar, and right triceps tendons in a 36-year-old male professional bodybuilder following a low-energy fall.

Extensive case history exists on anabolic-androgenic steroid (AAS) users suffering tendon ruptures, dating back to 1995.[8,9] A recent report was also published on an AAS-using bodybuilder who suffered a triceps tendon rupture.[10] However, the patient had no reported prior history of systemic illness, pharmacologic risk factors, or steroid use, making the injuries unusual. This report highlights surgical decision-making and rehabilitation strategies required for multi-tendon injuries.

Informed consent was obtained from the patient for the publication of this case report.

CASE DESCRIPTION

Pre-operative Course

A 36-year-old male professional bodybuilder (height: 6′0″, weight: 236 lbs., BMI: 32) presented to the emergency department following a low-energy fall on ice, sustaining sudden eccentric contraction of his right leg and direct impact to his right upper extremity. The patient reported immediate inability to bear weight. Physical examination revealed complete loss of active knee extension bilaterally, with the left knee demonstrating a 3 cm palpable gap proximal to the patella and the right knee exhibiting patella alta. The right elbow displayed a 2 cm retracted mass at the triceps

Figure 1. Sagittal T2-weighted fat-suppressed MRI of the right knee with discontinuity of the proximal patellar tendon and periosteal avulsion from the inferior pole of the patella. The retracted tendon is visualized proximal to the patella with associated effusion and soft-tissue edema. [STUDY: RIGHT KNEE; SERIES: T2 FS SAG]

Figure 2. Sagittal T2-weighted MRI of the right elbow demonstrating complete distal triceps tendon rupture. The tendon is retracted proximally from the olecranon, with high signal fluid interposed at the expected insertion site, and no bridging fibers identified. These findings are consistent with a full-thickness avulsion of the triceps tendon.
[STUDY: RIGHT ELBOW; SERIES: T2 FS SAG]

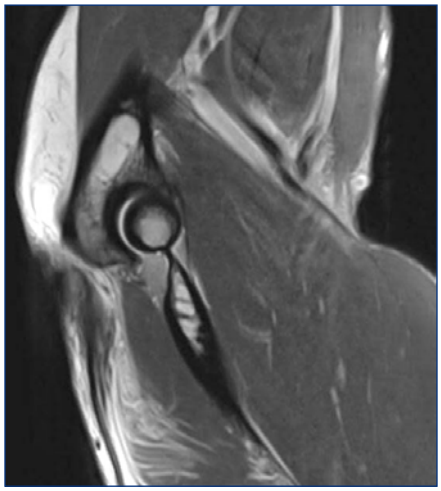
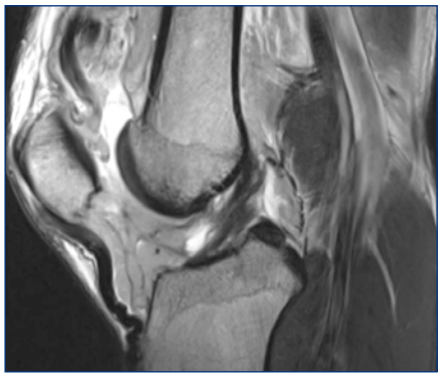


Figure 3. Sagittal T2-weighted fat-suppressed MRI of the left knee showing full-thickness quadriceps tendon rupture. The tendon is retracted proximally from its patellar insertion, with high T2 signal intensity occupying the gap, and no intact bridging fibers seen. Associated soft- tissue edema and suprapatellar effusion are present.
[STUDY: LEFT KNEE; SERIES: T2 FS SAG]



insertion with absent active extension against gravity. The patient denied any prodromal symptoms.

Radiographs revealed a left patella baja, a right patella alta, and no fractures. The right knee MRI showed complete patellar tendon avulsion from the inferior pole of the patella with medial retinaculum laxity [**Figure 1**]. Radiograph of the right elbow revealed tissue swelling over the olecranon, and MRI demonstrated a full-thickness triceps tendon tear with 2-3 mm diastasis [**Figure 2**]. MRI also demonstrated a 3.8 cm retracted left quadriceps tendon tear with partial vastus lateralis injury [**Figure 3**]. Laboratory investigations, including a complete blood count [**Table 1**] and a comprehensive metabolic panel [**Table 2**], were not indicative of steroid usage. The patient was admitted for orthopaedic consultation and pre-operative optimization. Indications for surgery were functional deficits from complete tendon rupture (ambulation compromised from bilateral knee extension loss and upper extremity function compromised from right elbow extension loss). Due to decreased right arm function, it was determined that restoring upper extremity strength would be beneficial for mobility during lower extremity recovery.

Intra-operative Course

The patient underwent single-stage repair of all three tendons. Anterior midline approach identified complete avulsion of the left quadriceps tendon with a 2 cm retracted periosteal sleeve from the superior patellar pole. The quadriceps tendon tissue demonstrated no gross calcification, degeneration, or features suggestive of chronic tendinopathy. After tendon debridement, a transosseous repair was performed using #5 FiberWire sutures (Arthrex, Naples, FL) passed through three drill holes in the patella (medial, central, lateral). The retinaculum was concurrently repaired with a locking epitendinous stitch. An anterior longitudinal incision exposed a complete avulsion of the right patellar tendon from the inferior pole with significant periosteal stripping. The patellar tendon tissue demonstrated no intraoperative evidence of degeneration, calcific deposition, or chronic attritional tearing. An identical transosseous technique was employed, securing the tendon to its anatomic insertion. The right triceps tendon was addressed via a posterior elbow approach, revealing a full-thickness tear at the olecranon insertion. The right triceps tendon tissue appeared robust and consistent with an acute avulsion injury without evidence of degenerative changes or poor tissue quality. This was reconstructed using the SpeedBridge system with two PEEK SwiveLock anchors (Arthrex, Naples, FL), providing biomechanical stability while avoiding excessive soft-tissue dissection.

Post-operative Course

Post-operatively, an immobilization protocol was required. Bilateral hinged knee braces were locked in extension to permit brace-protected weight-bearing as tolerated, and the right elbow was splinted at 60° of flexion with non-weight-bearing precautions. To enable upright mobility, the patient ambulated with a front-wheeled walker outfitted with a right forearm platform. Pain was managed with scheduled acetaminophen and oxycodone.

Rehabilitation from weeks 0–6 emphasized strict immobilization, with passive range of motion initiated at four weeks under therapist supervision. At weeks 6–12, hinged braces

Table 1. Pre-Operative Complete Blood Count (CBC) Panel Data with Differential

Component	Reference Range & Units	Result
WBC	3.50–11.0 10*3/uL	9.7
RBC	4.20–5.50 10*6/uL	**4.15**
Hemoglobin	13.5–16.0 g/dL	**12.3**
Hematocrit	37.0–47.0 %	37.9
MCV	80.0–98.0 fL	91.4
MCH	26.0–34.0 pg	29.7
MCHC	32.0–36.0 g/dL	32.5
RDW	11.5–14.5 %	**16.3**
Platelets	150–400 x10*3/uL	326
MPV	7.4–10.4 fL	7.9
Neutrophils (Relative)	%	61.0
Lymphocytes (Relative)	%	24.0
Monocytes (Relative)	%	13.0
Eosinophils (Relative)	%	2.0
Basophils (Relative)	%	0.3
Neutrophils (Absolute)	1.5–7.5 10*3/uL	5.9
Lymphocytes (Absolute)	1.0–4.0 10*3/uL	2.3
Monocytes (Absolute)	0.2–0.8 10*3/uL	**1.3**
Eosinophils (Absolute)	0.0–0.5 10*3/uL	0.2
Basophils (Absolute)	0.0–0.2 10*3/uL	0.0
RBC Morphology	—	**Abnormal**
Hypochromia	—	1+
Polychromasia	—	1+
Ovalocytes	—	1+
Eosinophils (Absolute)	0.0 - 0.5 10*3/uL	0.2

Abbreviations: WBC = White Blood Cell, RBC = Red Blood Cell, MCV = Mean Corpuscular Volume, MCH = Mean Corpuscular Hemoglobin, MCHC = Mean Corpuscular Hemoglobin Concentration, RDW = Red Blood Cell Distribution Width, MPV = Mean Platelet Volume
Bold indicates out-of-range values

were progressively unlocked to allow controlled motion (0–90° for the knees, 30–90° for the elbow). By 12 weeks, the patient began outpatient physical therapy focused on gait training and progressive strengthening.

Right Triceps Tendon: One month post-op, the right elbow achieved 0–90° active/passive range of motion (ROM) without palpable defects and with antigravity strength. By three months, ROM improved to 0–115°, and the brace was discontinued. At six months, ROM (0–135°) was attained with functional extension strength. At one year, elbow function remained intact without daily limitations.

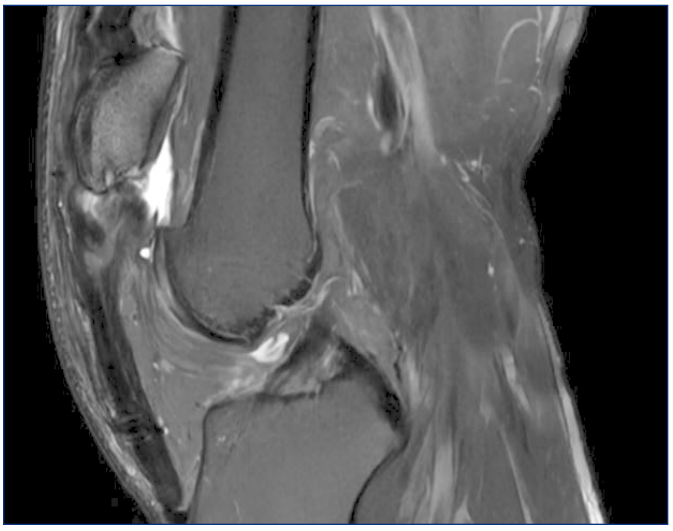
Left Quadriceps Tendon: At one month, the left knee had 0–60° ROM without extensor lag and could support weight-bearing in a brace. By three months, ROM expanded to 0–110° with full passive extension, and the patient demonstrated normal quadriceps activation. Strength continued to

Table 2. Pre-Operative Comprehensive Metabolic Panel (CMP) Data

Component	Reference Range & Units	Result
Sodium	136–145 mmol/L	138
Potassium	3.5–5.3 mmol/L	3.8
Chloride	98–110 mmol/L	103
CO_2	20.0–31.0 mmol/L	31.0
BUN	6.0–24.0 mg/dL	19.0
Creatinine	0.6–1.2 mg/dL	1.1
Glucose	70–140 mg/dL	125
Calcium	8.6–10.4 mg/dL	**8.3**
AST	10–36 U/L	**100**
ALT	9–46 U/L	**123**
Alkaline Phosphatase	40–115 U/L	64
Total Protein	6.4–8.4 g/dL	6.9
Albumin	3.6–5.1 g/dL	**3.1**
Total Bilirubin	0.2–1.2 mg/dL	0.2
GFR	>60.0 mL/min/1.73m^2	>60.0
Anion Gap	6–19 mmol/L	**4.0**

Abbreviations: BUN = Blood Urea Nitrogen, AST = Aspartate aminotransferase, ALT = Alanine aminotransferase, GFR = Glomerular Filtration Rate
Bold indicates out-of-range values

Figure 4. Sagittal T2-weighted fat-suppressed MRI of the right knee at follow-up showing irregular morphology of the proximal patellar tendon with heterogeneous signal, interposed fluid, and surrounding soft-tissue edema. A gap at the tendon origin with proximal retraction further supports the mechanical failure of the previous repair.
[STUDY: RIGHT KNEE; SERIES: T2 FS SAG]



improve, allowing return to work as a personal trainer at six months with full functional ROM (0–125°), which was sustained at one year (0–130° ROM), with no residual weakness affecting mobility.

Right Patellar Tendon: At one month, ROM was 0–60° with intact but limited strength. By three months, ROM

improved to 10–110°, and straight leg raise was intact. At six months, the patient ambulated independently and began light exercise, though mild swelling persisted. At one year, examination of the right knee revealed active and passive ROM from 3° to 125° and the ability to obtain and maintain a straight leg raise without extensor lag. Strength testing revealed 5/5 quadriceps strength. Despite preserved extensor mechanism function and activity modification, the patient reported, and an orthopaedic examination demonstrated moderate swelling of the right knee. Given the chronicity of the effusion and persistent symptoms despite conservative management, an MRI of the right knee was obtained to further evaluate the extensor mechanism. MRI of the right knee showed signal heterogeneity and irregularity at the patellar tendon origin with mild patella alta and a stable effusion, suggestive of surgical failure [**Figure 4**]. Despite this, the patient reported no limitations with daily activities. Revision with Achilles allograft was recommended but deferred until after the patient's out-of-country wedding, after which he did not return for follow-up and remained unreachable despite repeated attempts at contact by the clinical team.

DISCUSSION

This case represents a rare instance of simultaneous quadriceps, patellar, and triceps tendon ruptures following low-energy trauma. Previous reports of a patient with Ehlers-Danlos syndrome who sustained a bilateral patellar tendon rupture and another patient with systemic lupus erythematosus who sustained a bilateral Achilles tendon and patellar tendon rupture address patients with known etiologies.[11,12] The occurrence of this simultaneous tri-tendinous rupture after a low-energy fall highlights the importance of considering atypical etiologies even in "healthy" adults. Metabolic workup was pursued to identify potential underlying causes; however, potential factors such as hyperparathyroidism, inflammatory arthritis, and collagen disorders were ruled out by serum studies. Additionally, the patient denied fluoroquinolone or corticosteroid use.[13-15] Family history was unremarkable, with no reported instances of spontaneous ruptures or hypermobility disorders. While no definitive etiology was identified, the negative workup itself is instructive, suggesting that subclinical tendon degeneration or biomechanical factors may predispose certain individuals to significant impairments after seemingly trivial traumas. In this case, his occupation suggests that chronic repetitive loading during exercise may have caused subclinical tendon degeneration, thereby increasing the likelihood of mechanical failure. Notably, a possible history of unreported usage of AAS or substances that do not appear on standard panels could have compromised tendon integrity. Mechanistically, animal and human studies suggest that AAS may alter tendon collagen metabolism, increase tendon stiffness, and reduce compliance, potentially predisposing to rupture.[16–18] The patient's muscular physique and low-energy injury mechanism make unreported AAS exposure a consideration. If so, this case would corroborate Kanayama et al's findings on how steroid-utilizing bodybuilders had a higher incidence of tendon ruptures, often outside of weightlifting.[15] A high index of suspicion for additional complications should also be maintained when the source of trauma is less overt or not indicative of the presented injury; this was how the triceps tendon rupture was discovered by the orthopaedic team during the initial consult examination before imaging studies.

While the patient adhered to rehabilitation protocol, having two compromised lower extremities can make it difficult to follow non-weight-bearing guidelines on both extremities; this may have contributed to the right patellar tendon never fully healing. When the patient began light resistance weight training exercise six months post-op, he may have inadvertently pushed himself too hard, possibly contributing to a reinjury. In cases of failed primary patellar tendon repair, revision surgery may require reconstructive techniques depending on tendon retraction, scarring, and tissue quality. Reconstructive strategies include hamstring autograft or synthetic augmentation, and bone-patellar tendon-bone or Achilles tendon allograft reconstruction. Published series report restoration of extensor mechanism function with improvements in quadriceps strength, knee range of motion, and reduction in extensor lag.[19]

CONCLUSION

This case highlights the rare occurrence of simultaneous ruptures of the quadriceps, patellar, and triceps tendons in a bodybuilder following a low-energy mechanism. Early clinical suspicion supported by multimodal imaging ensured a timely diagnosis. The patient underwent single-stage surgical repair and careful rehabilitation to regain functional independence at one-year follow-up.

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Management of Vitamin D in Chronic Kidney Disease

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ABSTRACT

Vitamin D plays a vital role in numerous physiological processes, including immune function, cardiovascular health, and bone maintenance. The adequacy of its status has been strongly associated with morbidity and mortality across diverse populations, particularly among individuals with chronic kidney disease (CKD). Given the kidneys' critical role in vitamin D metabolism and homeostasis, deficiency is highly prevalent in this population and has been linked to adverse outcomes and poor survival. In this review, we provide a comprehensive overview of vitamin D, its sources, metabolism, physiological actions, and clinical management of its deficiency or insufficiency, with a specific focus on patients with CKD.

KEYWORDS: Vitamin D; CKD; end-stage kidney disease; dialysis; mortality

INTRODUCTION

Vitamin D plays a critical role in mineral metabolism, immune regulation, and cardiovascular health, and its dysregulation is particularly relevant in the context of chronic kidney disease (CKD).[1] As kidney function declines, multiple disruptions in vitamin D metabolism occur, resulting in altered calcium-phosphate homeostasis, elevated parathyroid hormone (PTH), and adverse cardiovascular and renal outcomes. Understanding the physiology of vitamin D, its unique actions in CKD, and available therapeutic strategies is crucial for optimizing the care of CKD patients.

VITAMIN D: FORMS AND METABOLISM

Vitamin D refers to a group of fat-soluble secosteroids, primarily vitamin D_3 (ergocalciferol), derived from plant sources, and vitamin D_3 (cholecalciferol), synthesized in the skin upon exposure to ultraviolet B radiation.[2] Both forms are biologically inactive and undergo sequential hydroxylation to become active. Following absorption or cutaneous synthesis, vitamin D is stored in adipose tissue and the liver, where it is first hydroxylated by hepatic 25-hydroxylase to 25-hydroxyvitamin D [25(OH)D], the major circulating and storage form.[3] It then binds with vitamin D-binding protein and is delivered to the kidneys, where, after glomerular filtration, it is picked up by proximal tubular cells with help of megalin receptor. It is then further hydroxylated by 1α-hydroxylase to produce 1,25-dihydroxyvitamin D [$1,25(OH)_2D$], the hormonally active form,[4] and is released into the circulation. In addition to renal synthesis, extrarenal tissues—including immune cells, the parathyroid glands, and vascular smooth muscle—express 1α-hydroxylase, enabling local production of $1,25(OH)_2D$ for autocrine and paracrine signaling.[5] The degradation of both 25(OH)D and $1,25(OH)_2D$ is regulated by 24-hydroxylase, which initiates their conversion into inactive calcitroic acid derivatives, thereby maintaining metabolic balance.[6]

ACTIONS OF VITAMIN D IN CKD

Although nongenomic signaling via cell membrane receptor remains to be fully elucidated,[7] the diverse physiological actions of vitamin D are primarily mediated through the vitamin D receptor (VDR), a nuclear receptor present in numerous tissues, including the kidneys, intestines, bones, vessels, and immune system.[8] Upon ligand binding, VDR forms a heterodimer with the retinoid X receptor and modulates the gene transcription involved in calcium absorption, bone turnover, cell proliferation, and cytokine regulation. These actions span endocrine, autocrine, and paracrine pathways, making vitamin D functionally versatile. While the primary effects of vitamin D involve maintaining mineral homeostasis via its action on the intestine (to increase calcium and phosphate absorption), bone (to regulate remodeling), and parathyroid glands (to suppress PTH), emerging clinical evidence highlights its broader relevance in cardiovascular protection, immune modulation, and survival.[9] Observational studies have linked adequate vitamin D status with improved all-cause mortality and reduced cardiovascular events in the general population, reinforcing its potential utility in high-risk groups such as those with CKD.[10]

Bone mineral metabolism

Reduced vitamin D activity along with hypocalcemia and hyperphosphatemia lead to secondary hyperparathyroidism. Animal studies have shown that elevated PTH levels in CKD lead to bone loss, vascular calcifications (VC),[11] and

suppression of erythropoiesis, contributing to anemia.[12] In humans, although most patients with CKD are asymptomatic, uncontrolled hyperparathyroidism can adversely affect bone, muscle, and tendon, leading to pain, tendon rupture, or bone fractures. It may also cause calciphylaxis, neurotoxicity, and pruritus.[13]

Hyperparathyroidism secondary to CKD is characterized by parathyroid gland hyperplasia and elevated PTH levels.[14] Elevated PTH can increase vitamin D levels by stimulating the activation enzyme 1-α hydroxylase and inhibiting the degradation enzyme 24-hydroxylase.[15] This response is insufficient to restore vitamin D adequacy. Moreover, the progressive loss of VDR further compromises the inhibitory effect of $1,25(OH)_2D$ on PTH synthesis.[14] To date, there is no conclusive evidence showing a complete reversal of these pathological processes in parathyroid gland or bone through vitamin D therapy. However, Fukagawa et al[16] demonstrated a regression in parathyroid gland volume measured by ultrasound, after 12 weeks of treatment with 4 µg of oral calcitriol administered twice weekly in nine patients on hemodialysis. Additionally, Andress et al[17] have shown an improvement in bone histology among 10 hemodialysis patients treated with a mean dose of 0.28 µg calcitriol for 12 months.

HYPERTENSION AND CARDIOVASCULAR OUTCOMES

Renin-Angiotensin-Aldosterone System (RAAS)

Renin-Angiotensin-Aldosterone System (RAAS) plays a key role in both the control of blood pressure and target-organ damage, especially in the heart and kidneys. Its dysregulation, which is highly prevalent in CKD, can lead to hypertension,[18-20] heart failure,[18,20] and CKD progression.[21-23] Vitamin D has a direct negative effect on RAAS activity.[24] This effect is likely mediated via plasma renin activity (PRA). Using a promoter-linked luciferase reporter assay, Yuan et al[25] showed a direct inhibition of renin gene transcription by $1,25(OH)_2D$. Indeed, animals lacking vitamin D 1α-hydroxylase gene exhibited elevated PRA, which could be normalized following $1,25(OH)_2D$ administration.[26] In human subjects with hypertension, a continuous negative correlation exists between plasma $1,25(OH)_2D$ levels and PRA.[27] However, existing prospective interventional trials failed to confirm a causal relationship.[28] It is likely that, in humans, the effect of vitamin D on renin is confounded by the individual variations in comorbid conditions and vitamin D metabolism.

Vascular health

Endothelial dysfunction promotes inflammation, contributes to hypertension and is a significant risk factor for cardiovascular diseases.[29-31] Studies have shown that as kidney function declines, there is a progressive worsening of flow-mediated dilatation and increased intima-medial thickness, indicating more severe endothelial dysfunction in patients with CKD.[32] Both endothelial cells and smooth muscle cells are key cell types to maintain vascular health and function, and they possess both 1α-hydroxylase and VDR locally, allowing autocrine, paracrine and endocrine actions of vitamin D.

Vitamin D regulates nitric oxide (NO) bioavailability, promotes its release, and supports endothelial cell survival, proliferation, and angiogenesis.[33] This is particularly relevant in CKD where NO activity is markedly diminished. Animal studies have demonstrated that vitamin D deficiency impairs NO-mediated endothelial dilation,[34] while vitamin D supplementation can improve endothelial function.[35,36] Similarly, in humans, low serum 25(OH)D levels have been associated with endothelial dysfunction in patients with CKD.[37] Clinical trials using cholecalciferol have demonstrated improvements in endothelial function in this population.[38] These findings were further supported by a recent umbrella review of interventional meta-analyses.[39]

In addition to its effects on nitric oxide, vitamin D is also a potent modulator of oxidative stress[40] —another key pathogenic factor contributing to endothelial dysfunction and tissue inflammation, particularly in patients with CKD. Vitamin D supplementation has been shown to reduce oxidative biomarkers such as malondialdehyde and advanced oxidation protein products via enhancing endogenous antioxidant defenses—including glutathione, superoxide dismutase, and catalase.[41,42] Although a single, high-dose administration of vitamin D has not been effective in reducing oxidative stress in healthy individuals, sustained supplementation in populations with a high-oxidative stress burden—such as those with CKD or diabetes—has been associated with decreased lipid peroxidation and improved antioxidant capacity.[43]

CKD PROGRESSION

Renal inflammation

In CKD, alongside endothelial activation, there is an increased release of pro-inflammatory chemokines mediated by nuclear factor-κB (NF-κB), which is predominantly activated in the renal mesangium.[44,45] Therefore, chronic inflammation is highly prevalent in patients with CKD and is associated with both cardiovascular effects and renal fibrosis. Chronic inflammation also stimulates FGF 23, and they are both independently associated with risk of death.[46] FGF 23 signaling requires Klotho, an essential co-factor, which is downregulated in CKD, leading to FGF 23 resistance in the kidney. This further downregulates vitamin D production by inhibiting 1α-hydroxylase, and increases its catabolism via upregulation of 24-hydroxylase.[47] Vitamin D deficiency upregulates TNF alpha-converting enzyme, further suppressing Klotho, and worsening FGF 23 resistance, which leads to a vicious cycle of inhibition of vitamin D activation.[48]

Animal studies have demonstrated an inverse relationship between blood vitamin D levels and the accumulation of macrophages and T cells in the renal cortex.[49] Treatment with vitamin D[45,50,51] and its analogs[52] suppresses NF-κB, T cell proliferation and stimulates anti-inflammatory cytokines. Paricalcitol also improves thrombomodulin level, which optimizes endothelial response to inflammation.[53]

Renal fibrosis

Renal fibrosis is a hallmark of progressive CKD and is characterized by myofibroblast recruitment or formation via epithelial-mesenchymal transition (EMT), primarily mediated by transforming growth factor β (TGFβ).[54,55] In addition to its anti-inflammatory and RAAS-regulating effects, active vitamin D inhibits partial or complete renal EMT, myofibroblast activation, renal EMT, and subsequent extracellular matrix production. It has been shown that pretreatment with active vitamin D inhibits indoxyl sulfate-induced EMT in human tubular epithelial cells via Akt and β-catenin pathway.[56] In an animal model of diabetic nephropathy, vitamin D was also shown to shift macrophage activity from the pro-inflammatory M1 phenotype to the anti-inflammatory M2 phenotype, reducing inflammation and fibrosis.[57] Therefore, existing evidence supports the notion that achieving adequate levels of vitamin D is important for the preservation of normal kidney structure and function.

Integrity of podocytes and renal tubular cells

Podocytes, a highly specialized cell population essential for maintaining the glomerular filtration barrier, are frequently injured in various glomerular diseases. Maintenance of these healthy podocytes requires adequate vitamin D.[58] Studies have shown that active vitamin D inhibits both transient receptor potential cation channel C6 (TRPC6), a slit diaphragm protein upregulated in proteinuric kidney diseases, and urokinase-type plasminogen activator receptor (uPAR), a protein critical in foot process effacement.[59,60] In addition, in vitro and animal studies[61] utilizing a mouse model of diabetic nephropathy have demonstrated that autophagy, which is beneficial for podocyte health, is regulated by VDR. Vitamin D enhances autophagosome formation via VDR, whereas autophagy is downregulated in VDR knockout mice. Furthermore, active vitamin D inhibits apoptosis[62] via the RAAS, Wnt/β-catenin[58] or phosphatidylinositol 3-kinase (PI3K)/Akt-signaling[63] pathway and restores podocyte morphology.[64] Taken together, podocyte represents one of many key targets for the protective effects of vitamin D in CKD.

Renal tubular epithelial (RTE) cells are another specialized, highly metabolic cell population that are crucial for proper kidney function. Rich in mitochondria, a key organelle for vitamin D metabolism in the proximal nephron, renal tubular epithelial cells are particularly susceptible to injury resulting from mitochondrial dysfunction. Vitamin D plays a critical role, both directly and indirectly, in preserving mitochondrial integrity. It enhances the production of potent antioxidant enzymes and strengthens the defense against reactive oxygen species,[65] promotes adaptive responses to endoplasmic reticulum stress, and supports mitophagy—an essential process for the removal of damaged mitochondria.[66]

VITAMIN D DEFICIENCY IN CKD

Vitamin D deficiency is defined based on the serum levels of 25(OH)D. Kidney Disease Outcomes Quality Initiative (KDOQI) defines vitamin D deficiency when the level is below 20 ng/mL, and vitamin D insufficiency when level is between 20–29 ng/mL.[67]

In the U.S., 28.9% of adults are vitamin D deficient, as per the National Health and Nutrition Examination Survey (NHANES), with an additional 41.4% being insufficient.[68] However, due to the dietary restriction, reduced sun exposure, and reduced conversion of 25(OH)D to 1,25$(OH)_2$D, the prevalence of vitamin D deficiency is higher in the CKD population and increases with each increasing stage of CKD.[69] The prevalence of vitamin D deficiency has not been reported in CKD or ESKD patients, but studies have estimated between 30% and 86% of patients to be vitamin D deficient.[70-74]

Multiple metabolic changes lead to vitamin D deficiency in CKD patients. First, limited sun exposure, malnutrition, reduced renal mass, decreased megalin expression in proximal tubular cells,[75] and loss of vitamin D binding protein due to proteinuria, lead to lower levels of 25(OH)D. Moreover, the conversion of 25(OH)D to its active form, 1,25$(OH)_2$D, is markedly impaired due to reduced nephron mass, tubular dysfunction and elevated fibroblast growth factor 23 (FGF 23), while vitamin D catabolism is accelerated due to increased 24-hydroxylase activity.[76] Therefore, it is common to observe deficiencies in both vitamin D stores and the active form, 1,25$(OH)_2$D, in patients with CKD

VITAMIN D THERAPY

Nutritional forms of vitamin D

Nutritional forms include vitamin D2 or ergocalciferol and vitamin D3 or cholecalciferol. Even though both forms may be absorbed equally well,[77] vitamin D2 binds to D-binding protein with lesser affinity and has a shorter half-life compared to vitamin D3.[78] This results in vitamin D3 being more effective in raising 25 (OH) D levels, which reflects total body vitamin D stores.[78] In fact, Wetmore et al[79] showed that cholecalciferol, when compared to ergocalciferol, was more effective in raising 25 (OH) D levels in patients with CKD stage 3-5 and serum 25 (OH) D levels below 30ng/ml. They were equally effective in raising 1,25 $(OH)_2$ D and in suppressing PTH levels. Despite animal and human retrospective studies showing clinical efficacy, prospective

interventional studies utilizing nutritional vitamin D agents have yielded mixed results.

PTH-lowering effect of nutritional vitamin D in CKD is well known, but the degree of effectiveness varies with studies, showing that it may not be as effective in advanced CKD, or when PTH level is significantly elevated.[80] Westerberg et al[81] supplemented 8000 units per day cholecalciferol for 12 weeks in 95 patients with CKD stage 3–4 and found a reduction in PTH in the treated group, while PTH level increased in the placebo group. Ergocalciferol supplementation has similar effects. Al-Aly et al[82] retrospectively studied 66 patients with CKD stage 3-4 and vitamin D insufficiency who received 50,000 units ergocalciferol weekly for 12 weeks and noted an improvement in PTH level (from 231 to 192 pg/mL, p<0.05). A recent meta-analysis confirmed this effect.[83] However, pooled data from four randomized controlled trials (RCTs), including 122 pre-dialysis CKD patients, did not find significant PTH lowering effect in nutritional vitamin D treated group compared to placebo. In fact, no PTH lowering effect was observed even among 568 dialysis patients from seven RCTs.[84]

Effect on albuminuria has also been mixed. Molina et al[85] randomly selected 101 patients with CKD stage 3–4 with at least 30mg/g of albuminuria and PTH level >70pg/mL to receive 666 IU/day cholecalciferol. A significant improvement in albuminuria (284mg/g to 167mg/g, p<0.001) occurred in the treatment group after six months. Susantitaphong et al[86] reported similar benefit of ergocalciferol. However, a large RCT by de Boer,[87] which included 1312 diabetic patients with CKD stage 2 or earlier, showed no effect on albuminuria reduction.

Among the dialysis population, nutritional vitamin D supplementation has not been shown to improve cardiac function or survival.[88,89]

Semi-active agents

Semi-active agents such as calcifediol (25-OH D3) bypass the 25-hydroxylation step and can be used in patients with liver disease. Others such as alfacalcidiol (1α-(OH) D3) and doxercalciferol (1α-(OH) D2) are synthetic prodrugs that bypass renal 1-hydroxylation and are activated by hepatic 25-hydroxylation.

Calcifediol (25-hydroxyvitamin D3) is a semiactive precursor of calcitriol. Russo et al[90] demonstrated an increase in 25 (OH) D levels within seven days of administration of calcifediol, and two RCTs conducted in vitamin D-deficient, post-menopausal women demonstrated a consistent benefit in raising 25 (OH) D levels when compared to cholecalciferol, where calcifediol was more effective and faster than cholecalciferol.[91,92] Calcifediol also had a higher rate of absorption and can be used in patients with malabsorptive states.[93] Subsequent studies have confirmed these findings in other patient populations.[94,95]

Furthermore, the effect of calcifediol on PTH has shown consistent benefits. For example, Germain et al[96] compared calcifediol, nutritional, and active vitamin D among 376 CKD stage 3–4 patients with vitamin D insufficiency and secondary hyperparathyroidism, and observed that only calcifediol reduced PTH and was not associated with hypercalcemia. Similarly, Sprague et al[97] demonstrated efficacy of calcifediol in a small CKD population with secondary hyperparathyroidism and vitamin D insufficiency, and subsequently[98] confirmed the findings in a larger cohort. They randomized 429 patients with CKD stage 3-4 vitamin D insufficiency and secondary hyperparathyroidism to receive 30 µg or 60 µg daily for 26 weeks and, when compared to placebo, were noted to have a significant reduction in level of PTH (p<0.001). Furthermore, response rates increased with duration of treatment and were independent of CKD stages. A post-HOC analysis of two RCTs involving 126 patients not only showed a consistent PTH lowering effect but also demonstrated a slower GFR decline in patients who achieved at least 30% reduction in PTH levels.[99]

There have been no studies on the effect of calcifediol on survival in the pre-dialysis CKD population, and most studies have combined different vitamin D formulations. However, among those on dialysis, the use of calcifediol did not appear to carry a survival benefit. In a phase III multicenter, randomized, open-label trial involving 284 adults on hemodialysis with vitamin D insufficiency, 24-month calcifediol supplementation did not reduce all-cause or cardiovascular mortality.[100] Similarly, use of other semi-active compounds also failed to show any significant benefit in cardiovascular or all-cause mortality.[101]

Doxercalciferol (1α-hydroxy D2) is another semiactive agent and a synthetic analog of ergocalciferol which is activated with hepatic hydroxylation and has been shown to increase $1,25(OH)_2D$ levels effectively.[102] It has shown consistent PTH lowering benefits among CKD population, including patients on hemodialysis. For example, Coburn et al[103] noted a 46% reduction in PTH after 24 weeks of titrating doxercalciferol among 55 patients with stage 3–4 CKD and secondary hyperparathyroidism. Similarly, Frazao et al[104] randomized 138 patients on hemodialysis to receive 10 µg doxercalciferol at each session, with dose adjusted to maintain PTH between 150–300 pg/ml. They found that PTH reduced to 44% of baseline value after 16 weeks of open-label treatment in the two groups, but only the treatment group showed persistent suppression. Yang et al[105] recently confirmed this finding with intravenous formulation. However, a survival benefit has not been noted, especially among the hemodialysis population.[106]

Active agents

$1,25(OH)_2D$ is also available as active agents like calcitriol for use in CKD patients, as it bypasses both hydroxylation steps in the liver and kidneys. Paricalcitol (19-nor-$1,25\ (OH)_2$ D2) is an analog which is widely used in the U.S. Several

others are available for use in certain countries, such as oxa-calcitriol (22-oxa-1,25$(OH)_2$ D3), falecalcitriol (1,25 $(OH)_2$-26,27-F6 D3), and eldecalcitol (2α- (3-hydroxypropoxy)-1,25 $(OH)_2$ D3).[107]

Clinical studies using active agents have demonstrated some benefits in CKD patients. For instance, Ritz et al[108] randomized 45 patients with CKD to receive 0.125 µg per day of calcitriol and noted that PTH levels were lower in this group compared to placebo. Subsequently, Isakova et al[109] demonstrated that supplementing 0.25 µg calcitriol daily for one week reduced PTH levels among 12 patients with CKD stage 3–4. Similar benefits of calcitriol have been demonstrated among patients with ESKD on hemodialysis.[110,111]

Calcitriol has also been shown to reduce albuminuria in pre-dialysis CKD patients. For example, Szeto et al[112] enrolled 10 patients with biopsy-proven IgA nephropathy already on ACEi or ARB to receive 0.5 µg twice weekly oral calcitriol for 12 weeks and noted a reduction in albuminuria (–0.26 g/g, 95% CI, –0.03 to –0.49). While this study lacked a control arm, Liu et al[113] subsequently confirmed this finding by random allocation of 50 patients with IgA nephropathy to receive similar dose of oral calcitriol or placebo for 48 weeks.

The effect of calcitriol on cardiovascular outcomes has been inconclusive. Gnudi et al[114] randomized 55 patients with CKD stage 3 and type 2 diabetes mellitus to receive 0.5 µg calcitriol daily or placebo and measured left ventricular mass with an MRI at baseline and at 48 weeks of treatment. However, they did not find a significant difference between the treatment arm and the placebo arm (median difference 1.84, 95% CI: –1.28–4.96). Similarly, no effect was noted on vascular stiffness after treatment with calcitriol.[115-117] However, calcitriol supplementation has been shown to lead to a reduction in myocardial hypertrophy in ESKD patients on hemodialysis.[118,119]

The potential benefit of calcitriol must be carefully weighed against the risks of hypercalcemia, hyperphosphatemia, and ectopic calcifications. In a study by Coyne et al[120] involving patients with stage 3–4 CKD and secondary hyperparathyroidism who received 0.25 µg of calcitriol daily, 1 out of 54 patients developed hypercalcemia (calcium >10.5mg/dl) and 28 patients developed hyperphosphatemia (phosphorus >4.5mg/dl). Among patients undergoing hemodialysis, calcitriol has been associated with a higher incidence of hypercalcemia. A study by Maxwell et al[121] randomized 22 hemodialysis patients to receive either 0.5 µg calcitriol daily or vitamin D3 and reported a peak calcium of 13.2mg/dl in 2 out of 13 patients. While calcitriol use has been linked with ectopic calcifications in animal studies, this has not been confirmed in human clinical studies.[122,123]

While an inverse relationship between vitamin D levels and mortality has been observed,[124-129] studies on supplementation with active vitamin D analogs have reported inconsistent results. In a study of 520 patients with CKD stage 3–5, supplementing with 0.25 µg/d to 0.5 µg/d of calcitriol was associated with a lower risk of progression to ESKD, the need for dialysis, and a lower risk of death.[130] Furthermore, Shoben et al[131] demonstrated that even lower doses of calcitriol (<0.25 µg/d–0.25 µg/d) in 1418 patients with CKD stage 3–4 were still associated with a 26% reduction in the risk of death (p = 0.016) and a 20% reduction in the combined risk of death or dialysis (p = 0.038). However, a recent meta-analysis which included 11,270 participants failed to corroborate the cardiovascular or all-cause mortality benefit of vitamin D supplementation.[132]

Similar to calcitriol, paricalcitol has also been shown to have beneficial effects on the bone mineral axis, CKD progression, and survival. It effectively reduces PTH levels among both CKD and hemodialysis patients. In the PENNY trial,[133] 88 patients with CKD stage 3–4 were randomized to receive 2 µg/d paricalcitol or placebo for 12 weeks. Paricalcitol was effective in reducing PTH (–75.1 pg/mL, 95% CI: –90.4 to –59.8; p <.001). These findings were also confirmed in head-to-head comparisons with both ergocalciferol[134] and calcitriol.[120] In a meta-analysis of nine RCTs including 832 patients with CKD stages 2–5, paricalcitol significantly suppressed PTH compared to placebo (risk ratio 6.37; 95% CI, 4.64–8.74; P<0.001).[135] Similar PTH lowering effect was demonstrated in a meta-analysis in patient on hemodialysis.[136]

Additionally, paricalcitol also has a protective effect on proteinuria. Agarwal et al[137] randomly selected 220 patients with CKD stage 3–4 to receive 9.5 µg/week of oral paricalcitol for 24 weeks. The results demonstrated a qualitative reduction in proteinuria by dipstick compared to placebo. Several studies have since corroborated their results, demonstrating similar benefits quantitatively in the CKD population,[138,139] and in patients with diabetic nephropathy.[140] De Borst et al[141] also conducted a meta-analysis on 688 patients from six studies who were on ACEi or ARB. Four of these studies utilized paricalcitol, while the other two utilized calcitriol. There was a 16% reduction in proteinuria among patients treated with active vitamin D compared to the control. There was no significant difference based on drug or its dosage used, cause of CKD, or duration of follow-up. A subsequent meta-analysis by Cheng et al[135] included four trials with 469 stage 2–4 CKD patients on ACEi or ARB, who exclusively received paricalcitol as the active vitamin D agent, found that patients treated with paricalcitol were 68% more likely to achieve at least a 10% reduction in proteinuria compared to control or placebo (RR 1.68; 95% CI, 1.25–2.25; P<0.001).

The effect of paricalcitol on cardiovascular health and survival has been variable. While Zoccali et al[142] did find a beneficial effect of paricalcitol on endothelium function, there have been no beneficial effects demonstrated on left ventricle mass or hypertrophy. For example, the PRIMO trial[143] randomized 227 patients with CKD stages 3–4 and mild to

moderate left ventricular hypertrophy to receive 2 µg daily paricalcitol versus placebo for 48 weeks, but did not notice a reduction in left ventricular mass. Similarly, the OPERA trial[144] did not find a beneficial effect of paricalcitol on left ventricular mass. Regardless of these effects on surrogates of cardiovascular disease, a meta-analysis combining seven clinical trials on paricalcitol and calcitriol by Li et al[145] did show a reduction in cardiovascular events (RR 0.27; 95% CI, 0.13–0.59). Furthermore, a meta-analysis comparing paricalcitol to other vitamin D agents demonstrated better survival in the paricalcitol-treated CKD patents (HR, 0.95; 95% CI, 0.91–0.99; P <0.001).[146]

Among dialysis patient, paricalcitol has been associated with a lower risk of death.[147] In fact, patients given paricalcitol have been shown to have better survival outcomes even when compared to calcitriol.[146] Teng et al[148] conducted a retrospective review of 69,492 patients on hemodialysis who received either paricalcitol or calcitriol, and noted that there were 3417 deaths among the paricalcitol group as compared to 6805 deaths among those that received calcitriol (rate ratio: 0.80, 95%CI 0.77–0.84, p<0.001). Although a subsequent study did not find such benefit,[106] a recent meta-analysis[136] involving four observational studies again showed improved survival (pooled HR of 0.86 (95% CI 0.80–0.91; p < 0.00001).

With regard to the adverse effects, paricalcitol appeared to carry less risks of hypercalcemia or hyperphosphatemia. In a study of 53 patients with stage 3–4, there was no increased risks of hypercalcemia or hyperphosphatemia when compared to placebo.[120,149] Other studies utilizing paricalcitol in hemodialysis patients also demonstrated a reduction in PTH levels without causing hypercalcemia or hyperphosphatemia.[150]

CONCLUSION

Vitamin D has myriad effects in the general population, especially in patients with CKD, via its role in calcium, phosphorus, PTH, and FGF 23 metabolism, along with its effect on albuminuria, inflammation, vascular health, morbidity, and mortality. Supplementation of vitamin D or its analogues can be beneficial in the CKD population regardless of dialysis dependency. However, conclusive evidence demonstrating its impact on key clinical outcomes, particularly survival, remains limited. Large-scale, well-designed prospective trials are needed to clarify the role of vitamin D supplementation on hard outcomes in patients with CKD and ESKD.

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[*Editor's note: Email corresponding author for complete list of references.*]

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Access to Smoking Cessation Services in Rhode Island: Medication and Counseling Utilization

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BACKGROUND

Tobacco use is the leading cause of preventable death and disease in the United States (U.S.), accounting for one in five deaths.[1] In 2022, the prevalence of current tobacco use in the U.S. was 19.8%.[2] In 2019–2022, individuals with higher prevalence of tobacco use included Non-Hispanic (NH) American Indian or Alaska Native (AI/AN) adults, individuals with disabilities, those with severe generalized anxiety disorder, and those with severe depression. In 2021, individuals with higher prevalence of tobacco use included those who experienced lower income, lower educational attainment, were uninsured or enrolled in Medicaid, and those with serious psychological distress.[3]

The 2014 revision of the Affordable Care Act mandates that state Medicaid programs cover costs for the seven Food and Drug Administration (FDA)-approved tobacco cessation medications [**Box 1**] for Medicaid beneficiaries.[4] The 2021 U.S. Preventive Services Task Force (USPSTF) recommendations for non-pregnant adults' tobacco smoking cessation interventions are to provide behavioral intervention and pharmacotherapy, while for pregnant adults, is to provide only behavioral interventions.[5] The coverage and access to evidence-based medication and counseling for those with nicotine dependence are essential to quitting success. Fifty-two research trials displayed that combining behavioral intervention with pharmacotherapy can increase cessation success by 70–100%.[6] Nonetheless, individuals face barriers in accessing these medications, which make tobacco and nicotine cessation challenging, even with the available coverage.[4]

Box 1. FDA-approved Tobacco Cessation Medications

Nicotine Patches
Nicotine Gum
Nicotine Lozenge
Nicotine Inhaler
Nicotine Nasal Spray
Bupropion
Varenicline

Rhode Island's Medicaid program provides comprehensive coverage* for tobacco cessation, including individual and group counseling and all seven FDA-approved medications.[4] Despite strong evidence supporting these treatments, they remain underutilized. Although fully covered, access is often limited by low awareness, constrained provider capacity, and administrative barriers.[7,8] Over-the-counter nicotine patches, gum, and lozenges are covered only through a written prescription, while Varenicline, nicotine inhalers, and nasal spray need prior authorization. Barriers vary by plan and include limits on treatment duration and annual use, prior authorization requirements, and restrictions with prescription, and stepped care therapy.[8] Difficulty with navigating services prevents tobacco users from receiving the treatment they need. Evidence shows that comprehensive, barrier-free, and well-promoted insurance coverage for cessation treatment increases utilization, improves quit rates, and is cost-effective.[9] Therefore, reducing barriers is needed to improve access to evidence-based, effective cessation services. This analysis focuses on the utilization of evidence-based tobacco cessation services among Rhode Islanders who currently smoke using the Rhode Island All-Payers Claim Database (APCD), 2017–2024.

Specifically, comprehensive cessation coverage includes:[4]

- *Individual, group, and telephone counseling*
- *All FDA-approved cessation medications and any future medications approved for this purpose by the FDA*
- *At least two quit attempts per year*
- *At least four counseling sessions of at least 10 minutes each per quit attempt*

METHODS

Data from the Rhode Island All-Payers Claims Database (APCD), also known as HealthFacts RI, for the period 2017–2024 were utilized to acquire information on tobacco use status, insurance type, and utilization of tobacco cessation medication and tobacco cessation counseling. The APCD is a large state database that includes medical and pharmacy claims, reported by public and private insurers as part of a state mandate. In this study, insurance type was categorized as Medicaid insurance, private insurance, and Medicare insurance. The Tobacco Cessation Counseling CPT codes used for this study were: 99406, 99406 (-25), 99407, 99407 (-25), 99078, HCPC Code - S9453, G0436, HCPC Code G9906, 4000F, and 4004F. The list of drugs used to identify medication utilization were:

- Chantix (varenicline) – all doses (.5 mg, 1mg, 2 mg)
- Zyban/Wellbutrin (bupropion SR-12-hour release 150 mg only)

**Coverage for all evidence-based cessation treatments, including counseling and both over-the-counter and prescription medications.*

- Nicotine Patches – all doses ex 7 mg, 14 mg, 21 mg
- Nicotine Gum – all doses – 2mg, 4mg
- Nicotine Lozenges – all doses – 2mg , 4mg
- Nicotine Nasal Inhaler – all doses
- Nicotine Nasal spray – all doses

Using APCD data, the percentage of current tobacco users accessing tobacco cessation medication was calculated, using the number of individuals who used tobacco and received the listed medication and the total number of individuals who used tobacco within each insurance category. A similar method was used to calculate the percentage of tobacco cessation counseling utilization across each insurance type, as seen in **Figure 1** and **Figure 2**. Results are reported among the current tobacco users who utilize services for each insurance type. Each percentage is defined as percentage of service utilization (either tobacco cessation counseling or medication) in that insurance type.

RESULTS

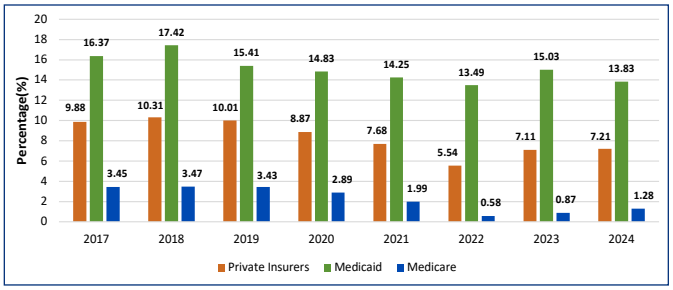
Figure 1 demonstrates that from 2017 to 2024, Medicaid recipients, who are current tobacco users, accessed tobacco cessation medications at higher proportions compared to other insurance types. **Figure 2** demonstrates that during the same time frame, there was a similar proportion of tobacco cessation counseling utilization among current tobacco users across all three insurance types. Notably, utilization of tobacco cessation medication and counseling is low for all insurance types. On average, one in six Medicaid recipients in Rhode Island who currently use tobacco are utilizing cessation medication through insurance. Similarly, one in 20 Medicaid recipients in Rhode Island who currently use tobacco are utilizing tobacco cessation counseling through insurance.

DISCUSSION

A low utilization of tobacco cessation services in Rhode Island was observed in 2017–2024 APCD data, supporting recommendations for increasing access and awareness for current tobacco users.

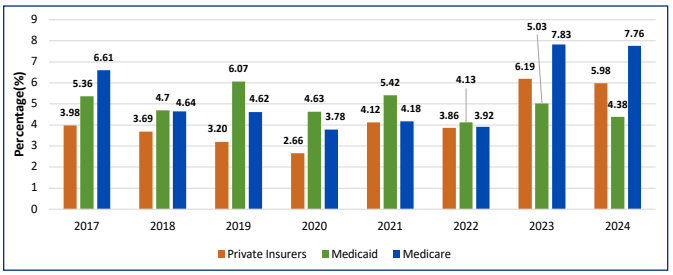
The higher utilization of tobacco cessation medication compared to tobacco cessation counseling suggests 1) healthcare professionals are more likely to recommend medication over counseling, and 2) patients are more likely to sustain cessation when medication is accessible as compared to counseling alone. In 2023, 65% of Rhode Island adults who smoked cigarettes reported being advised to quit by health professionals, while 35.39% and 31.03% of those who currently smoke reported that a health professional discussed quit medication and non-medication quit strategies, respectively.[10] These findings represent potential missed opportunities for healthcare professionals to provide awareness and education about comprehensive cessation treatment, inclusive of both medication and counseling.

Figure 1. Treatment Reach of Tobacco Cessation Medications for Current Tobacco Users, 2017–2024



Source: HealthFacts RI, the Rhode Island all payer claims database (APCD) 2017–2024, provided by the EOHHS EcoSystem

Figure 2. Treatment Reach of Tobacco Cessation Counseling for Current Tobacco Users, 2017–2024



Source: HealthFacts RI, the Rhode Island all payer claims database (APCD) 2017–2024, provided by the EOHHS EcoSystem

In 2024, approximately three out of five Rhode Island adults who currently smoked reported quit attempts in the past year.[11] During the same time, 76% of Rhode Island Medicaid beneficiaries who smoke reported a quit attempt in the past 12 months.[11] This suggests most Rhode Islanders who smoke are interested in quitting, but evidence-based insurance covered services are underutilized in quit attempts. Full cessation from tobacco and nicotine is a journey and can take multiple attempts to succeed. Easier access to free or low-cost comprehensive tobacco cessation resources can support this success. Healthcare professionals are crucial in connecting patients with the appropriate resources to support quitting tobacco. To increase the success of quit attempts, patients should be linked to evidence-based treatments, like state quitline services such as QuitNowRI. QuitNowRI provides comprehensive, evidence-based counseling and medication (Nicotine Replacement Therapies, NRTs), and healthcare professionals can easily refer patients to QuitNowRI services. This service is free to Rhode Islanders aged 13 years and older, regardless of income, insurance status, or language. QuitNowRI has a specialized web page for healthcare professionals, with free accredited Continuing Medical Education (CME, CNE, CPE) modules focusing on best practices for tobacco treatment and tobacco cessation using medication and behavioral support.

Pharmacist prescription authority is another strategy to increase access to tobacco and nicotine cessation treatment

for Rhode Islanders. Nearly 90% of United States residents live within five miles of a community retail pharmacy.[12] Pharmacies offer extended hours of operations including nights, weekends, and holidays. Pharmacists are well dispersed in the community, can be seen without an appointment, are knowledgeable about drug interactions, and can respond quickly to drug therapy modifications. In March 2024, the Center for Medicaid and CHIP Services (CMCS) in the Centers for Medicare & Medicaid Services (CMS), issued a bulletin, "*Strategies to Improve Delivery of Tobacco Cessation Services*," highlighting partnering with providers such as pharmacists to increase access to cessation treatments.[13] Allowing trained pharmacists to write prescriptions for cessation medications can increase access to low or no-cost treatments for Medicaid beneficiaries and other patients.

According to the National Conference of State Legislatures, there are currently 18 states with statutes or regulations for pharmacist prescribing of tobacco cessation aids.[14] New Mexico has had its pharmacists prescribe cessation aids since 2004. An article in the *Journal of Rural Health* states, "…evidence supporting the effectiveness of cessation services delivered by pharmacists, and a growing number of state laws providing prescriptive authority, community pharmacists can play a vital role in addressing tobacco use."[15] The article emphasizes impacts that can be made through pharmacist prescriptive authority in rural communities.

Providing pharmacists with the ability to prescribe tobacco cessation medication such as nicotine replacement therapy (NRT), or offering brief quit counseling, leverages a trusted and sustainable infrastructure to increase tobacco treatment options for those experiencing lower income or with reduced access to transportation, including those in rural communities. This initiative helps assure individuals, such as those with behavioral health conditions who may have regimented pharmaceutical routines, have further support in their tobacco quit journey in addition to their traditional healthcare professionals. This strategy also supports the transient or unhoused population who may experience barriers in establishing a primary care provider or a permanent address for mailed prescriptions.

In conclusion, the results of this study indicate that tobacco cessation medication and counseling are low for all insurance types. Strategies to expand access to and adoption of comprehensive cessation services in Rhode Island include: increased awareness of tobacco use treatment methods; increased engagement of healthcare professionals in tobacco use cessation, improved Quitline services, utilization of the Quitline by health professionals, and increased use of QuitNowRI's referral process among healthcare professionals; increased use of QuitNowRI's continuing education for healthcare professionals; and authorization of pharmacists to prescribe tobacco cessation medications can help ensure Rhode Islanders have equitable and effective support to successfully quit tobacco and nicotine products.

Limitations of this study include: (1) APCD claims data capture only provider-billed services, and (2) individuals with multiple insurance types may appear multiple times in the dataset. Regardless, this study highlights the importance of expanding access to and increased awareness of comprehensive services for tobacco and nicotine addiction treatments for cessation.

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Disclaimer: Data for this article was obtained through an approved request to the Rhode Island All-Payer Claims Database as administered by the Rhode Island Department of Health (RIDOH). Data was obtained for 2017-2024. RIDOH is not responsible for the author's analysis, opinions and conclusions contained in this document.

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Rhode Island Monthly Vital Statistics Report
Provisional Occurrence Data from the Division of Vital Records

VITAL EVENTS	REPORTING PERIOD		
	OCTOBER 2025	12 MONTHS ENDING WITH OCTOBER 2025	
	Number	Number	Rates
Live Births	837	10,832	10.2*
Deaths	883	10,553	10.0*
Infant Deaths	0	50	4.6#
Neonatal Deaths	0	34	3.1#
Marriages	855	6,913	6.5*
Divorces	193	2,531	2.4*

* Rates per 1,000 estimated population
# Rates per 1,000 live births

Underlying Cause of Death Category	REPORTING PERIOD			
	APRIL 2025	12 MONTHS ENDING WITH APRIL 2025		
	Number (a)	Number (a)	Rates (b)	YPLL (c)
Diseases of the Heart	160	2,357	214.8	2,950.0
Malignant Neoplasms	148	2,157	196.6	3,945.0
Cerebrovascular Disease	38	476	43.4	442.5
Injuries (Accident/Suicide/Homicide)	48	847	77.2	9,639.0
COPD	32	480	43.7	527.0

(a) Cause of death statistics were derived from the underlying cause of death reported by physicians on death certificates.
(b) Rates per 100,000 estimated population of 1,097,379 for 2020 (www.census.gov)
(c) Years of Potential Life Lost (YPLL).

NOTE: Totals represent vital events, which occurred in Rhode Island for the reporting periods listed above.
Monthly provisional totals should be analyzed with caution because the numbers may be small and subject to seasonal variation.

Why join RIMS?

The Rhode Island Medical Society is your voice at the State House and in the community. In 2025, we secured wins on prior authorization, clinician wellness, and primary care funding—but this work depends on physician support. Without membership, RIMS cannot continue to advocate, educate, and protect the profession. Join or renew today—and consider getting involved in one of our committees. Together, we are stronger. The Rhode Island Medical Society is the only organization dedicated solely to advocating for physicians and their patients in our state.

In 2025, RIMS members helped

- Eliminate prior auth for PCP-ordered services (3-year Medicaid pilot)
- Secure fair Medicaid rates—up to 100% of Medicare starting Oct. 2025
- Protect physician wellness with the Clinician Wellness & Support Act

We're not stopping here

RIMS is fighting for the future of telemedicine, tackling workforce shortages, and reducing administrative burdens.

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RIMS worked to secure and support key budget investments.

Medicaid primary care rate increase

Up to 100% of medicare rates
Starting October 2025

Medicaid prior authorization pilot

Eliminates prior authorization for Medicaid for three years
Starting October 2025

Physician loan repayment funding

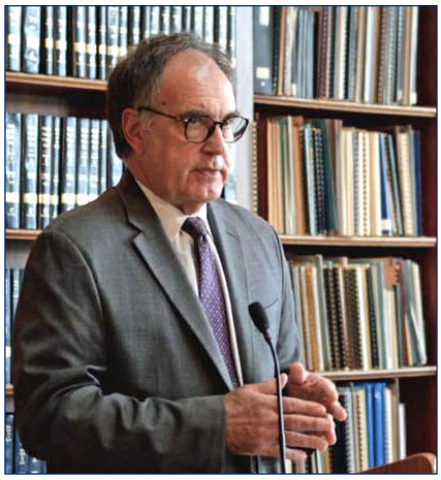
Includes $200,000 in funding to recruit and retain clinicians

Health center funding

Sustained investments in FQHCs and community health

Health services funding assessment

$30Mannually for primary care and other critical programs



Our priorities

RIMS focused on strengthening Rhode Island's healthcare system, protecting physicians' well-being, reducing administrative burdens, and improving access to care. Together with members, specialty societies, and partner organizations, we made significant progress on our top priorities.

The Rhode Island Prior Authorization Reform Act (SB 168/HB 5120)

Eliminates prior authorization for admissions, services, and procedures ordered by in-network primary care physicians in a three-year pilot.
Effective: October 1, 2025.
Status: Passed and signed
Sponsored by: Rep. Brandon Potter; Sen. Melissa Murray

The Rhode Island Clinician Wellness and Support Act (SB 695/HB 6036)

Recognizes RIMS' Physician Health Program in statute, strengthens confidentiality protections, and updates licensing language to encourage clinicians to seek care without fear.
Status: Passed and signed
Sponsored by: Rep. John "Jay" Edwards; Sen. Bridget Valverde

"I'm Sorry" Bill (H6210/S66)

Although not yet enacted, RIMS made significant progress this session on legislation to allow physicians to express sympathy or apologize after an adverse outcome without it being used as evidence of liability. We met twice with the Rhode Island Association for Justice (trial lawyers) and reviewed their suggested language—which we ultimately could not support—laying important groundwork for next session.
Sponsored by: Rep. Teresa Tanzi; Sen. Pamela Lauria

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Expanding Access to Care for Immigrants with End-Stage Kidney Disease in Rhode Island

ERIC S. KERNS, MD; DAVID MORALES; KATHERINE RIZZOLO, MD

End-stage kidney disease (ESKD) is a leading cause of morbidity and mortality in the United States. Patients on dialysis spend more time in hospitals and skilled nursing facilities,[1] undergo more surgeries and procedures,[2] and have a five-fold higher mortality compared to the general population.[3] On a per-patient basis, ESKD requiring dialysis is among the most expensive chronic medical conditions in the United States.[4] To control costs and ensure healthcare coverage, the federal government passed legislation in 1972 that expanded Medicare to all US citizens with ESKD. The federal legislation did not address coverage for non-US citizens with ESKD.[5]

There are an estimated 5500 to 9000 undocumented immigrants with ESKD in the US.[6] These patients are excluded from Medicare, the Affordable Care Act, and most state Medicaid programs. Their medical care varies from state to state.[7] In some states, they receive emergency- only dialysis for life-threatening uremia, hyperkalemia, and volume overload,[8] a practice that costs four times as much,[9] is associated with 14-fold higher mortality rate,[10] and puts excess stress on patients and providers.[11] Hospitals receive reimbursement through the provisions of the Emergency Medical Treatment and Labor Act (EMTALA).[12]

In Rhode Island, there is no statewide program to provide healthcare coverage for this vulnerable patient population. They often present late to emergency rooms or urgent care centers with symptomatic, severe, and irreversible chronic kidney disease. At Brown University Health (BUH) hospitals and clinics, they apply for financial assistance because there is no other state mechanism in place to cover their care. Depending on income and financial resources, Community Free Service (CFS) covers a portion of chronic dialysis treatments, vascular access procedures, emergency room and hospital costs. However, CFS does not pay for prescription medications, rehabilitation or skilled nursing, or medical expenses outside of the hospital system, and most importantly, it does not pay for kidney transplantation.

Kidney transplantation is the best treatment for ESKD—there is an 85% five-year survival after transplant, as compared to a 40% five-year survival after starting dialysis. Kidney transplant is also the cheapest. Whereas dialysis costs roughly $90,000 per patient per year, post-transplant care costs under $40,000 per year after the initial surgery and hospitalization.[13] For a patient with a life expectancy exceeding three years, transplantation will save the healthcare system tens of thousands of dollars,[14] not accounting for the increase in work force that will result from freeing people of dialysis. In one study, 82% of undocumented immigrants on dialysis reported that they would return to work if given a kidney transplant.[15] Further, there are data to support that undocumented immigrants pay into the healthcare system more than is paid on their behalf,[16] and that non-US citizens are donating healthy, viable organs to the donor pool that are largely being received by US citizens.[17]

Undocumented Rhode Island residents with ESKD are excluded from kidney transplantation at BUH. All of us who work in the hospitals provide care for these patients, and many of us depend on them outside of work, in the community. They are a vital part of our city and our state, many with children, extended families, and important jobs—drivers, restaurant staff, daycare employees, construction workers, just to name a few. The American Immigration Council estimates that 3% of Rhode Island's 1.1 million people are undocumented immigrants, accounting for 4.2% of the Rhode Island workforce and $100 million in state and local taxes paid.[18]

In 2024, Representative David Morales introduced a bill aiming to expand Emergency Medicaid to all persons living in Rhode Island suffering from ESKD, regardless of immigration status. The bill stated that Emergency Medicaid coverage shall begin at the point an individual requires a fistula or indwelling catheter for hemodialysis or peritoneal dialysis, and shall also cover kidney transplants for the same persons, and that coverage shall be available to both undocumented individuals and individuals who are qualified non-citizens who have not been present in the US for five years to receive federal benefits such as Medicaid. There is a precedent for use of Emergency Medicaid in neighboring states for immigrant patients with ESKD. In Massachusetts, patients are eligible for a Health Safety Net mechanism through Medicaid, which covers dialysis and transplantation at centers participating in the MassHealth program. In Connecticut and New York, patients can apply for Emergency Medicaid outpatient dialysis coverage. Currently, 20 states have provisions for dialysis, and five states have provisions for transplant. Rhode Island is not one of them.[7]

The bill, re-introduced in the House this session by Rep. Morales, and in the Senate by Sen. Pam Lauria, is a move towards an inclusive, non-discriminatory healthcare system. It ensures that all patients with ESKD receive consistent, medically appropriate care in a stable and sustainable way. Most importantly, it will improve and prolong the lives of our neighbors while saving the healthcare system in Rhode Island hundreds of thousands, potentially millions, of dollars.

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Functional Disorders and Associated Challenges in Diagnosis and Communication with Patients

PRERANA BARANWAL, MD

I read with great interest the article by Joseph H. Friedman, MD, "Functional Disorders," in the February 2026 issue of the *Rhode Island Medical Journal*.[1] Dr. Friedman highlights the challenges in the diagnosis of functional disorders and in the communication of these diagnoses to patients.

"Functional" disorders are typically described as those which manifest with symptoms but do not ultimately derive from an organic etiology.[2] They are some of the most commonly encountered disorders across specialties, and frequently cause significant distress for patients. Often, extensive testing is completed and resources expended, but ultimately without identification of an organic disease process. Providers face the challenge of clearly communicating the functional diagnosis to their patient, while patients are often frustrated by the lack of a seemingly "tangible" diagnosis, and can feel dismissed by their providers or seek out second, third, or fourth opinions.

Dr. Friedman's observations about functional neurological disorders are highly relevant to other specialties as well. As a pediatric gastroenterologist, one of the most common entities I routinely diagnose is some kind of functional gastrointestinal (GI) disorder, such as functional abdominal pain, irritable bowel syndrome (IBS), functional dyspepsia, etc. The exact pathophysiology behind these disorders is not clearly understood, and research is ongoing. However, what is known is that there is a brain-gut interaction that leads to the inextricable link between the brain and the GI system. Optimal management of these conditions typically involves a multidisciplinary approach and, importantly, usually involves a mental health provider to address underlying anxiety or stress that may be contributing to symptoms. The latest edition of the Diagnostic and Statistical Manual of Mental Disorders (DSM-5-TR), which categorizes functional gastrointestinal (GI) disorders, notes that, if a functional GI disorder is suspected, unless there are alarm signs/symptoms or other concerning features, testing should be limited to that which is deemed necessary, as excessive or repetitive testing can actually lead to more anxiety for patients, thereby exacerbating symptoms further, and can also lead to unnecessary healthcare costs.[3]

Of course, in clinical practice, this ideology can fall to the wayside. There are multiple reasons for this, including: (1) patients/families understandably wanting to ensure that the patient is receiving the correct diagnosis, sometimes advocating for extensive testing that may not always be necessary; (2) providers sometimes feeling bound by a medical-legal environment in which they feel they must "rule out" other common, organic pathologies, even if the likelihood of diagnosing such organic processes is low, based on the individual patient's history and presentation; and (3), as Dr. Friedman notes, the diagnosis of a functional disorder is often mistakenly perceived by the patient/family as being told that they are "crazy,"[1] when, in fact, this is not the case at all. Similarly, one of the most important aspects of managing functional GI disorders is understanding and conveying to patients that the symptoms involved in functional GI disorders are, in fact, real and distressing, and not "in one's head." However, in the process of reaching this understanding, extensive testing is often undertaken.

Given the prevalence of functional GI disorders and the possibility, for many of these disorders, of significant relief with appropriate management, it is important to diagnose functional conditions appropriately, as Dr. Friedman suggests in his piece. While some patients will be receptive to the diagnosis and others will not, it is imperative that medical providers continue to listen to patients, complete the appropriate amount of investigation into the reasons for their symptoms, and, if a functional disorder is ultimately suspected, ensure that they clearly and openly communicate with patients and families about what this means and how best to approach the management.

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Disclosures/Conflicts of Interest

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Protecting Public Health During the World Cup

Preparing for safe and healthy celebrations.

Mass. Dept. of Public Health coordinating preparations for FIFA World Cup 2026™

Rhode Island preparing for Summer of Soccer™-related events

FOXBOROUGH, MA — This month the US, Canada, and Mexico, are hosting the FIFA World Cup 2026™ Soccer Tournament from June 11 through July 19. A total of 104 games will be played across North America, including seven games scheduled to take place at Boston Stadium, in Foxborough, MA.

Seven games are scheduled to take place at Boston (Gillette) Stadium, in Foxborough, MA, this month. [MASS. DEPT. OF PUBLIC HEALTH]

The Massachusetts Department of Public Health (MA DPH) is planning and coordinating to protect the health and safety of residents and visitors this summer. For guidance and information from MA DPH, visit the MA DPH website. The Rhode Island Department of Health is working in close partnership with MA DPH.

MA DPH preparations

DPH's Office of Preparedness and Emergency Management (OPEM) is leading preparation efforts for the department. OPEM's long-tested experience successfully coordinating public health operations for major gatherings, like the Boston Marathon, will inform all activities. This involves:

- Comprehensive, multi-agency planning
- Real-time surveillance and situational awareness
- Coordinated emergency preparedness and response actions
- Healthcare system readiness
- Risk communication
- Close collaboration with local, state, federal, and private partners

Legislators join 'Summer of Soccer' unveiling for upcoming international tournament

STATE HOUSE — Rhode Island lawmakers joined General Treasurer **JAMES DIOSSA**, Governor **DAN MCKEE**, Providence Mayor **BRETT SMILEY** and other officials recently to announce the comprehensive operational and community plan for the "Rhode Island Summer of Soccer." This initiative will transform the state into a premier destination for international fans, anchored by a team base camp, a central Fan Zone in Providence, and a robust "Stadium Express" transportation network.

Sen. **LORI URSO** and Rep. **JOSHUA J. GIRALDO** emphasized the legislative commitment to the project, highlighting the community impact and the strategic allocation of funding to support transportation efforts.

"The tradition of soccer in Rhode Island dates back to the 19th century in our mill cities, and today, as a pro sport in our state, it unites us as a community," said Senator Urso (D-Dist. 8, Pawtucket). "This summer's activities are sure to engage soccer fans, and to attract new ones to the game, while boosting local commerce. I congratulate Treasurer Diossa, Liz Tanner, and the entire Ocean State 2026 team for what is sure to be a memorable World Cup experience."

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"As a long time soccer player and World Cup fan, I am beyond thrilled that Rhode Island will not only be enjoying the economic benefits of the 2026 World Cup in our backyard, but that a culture of soccer will pervade Rhode Island, and many people—adults and children—will get to enjoy this sport that brings so many groups and cultures together," said Representative Giraldo (D-Dist. 56, Central Falls).

DPH has strengthened its incident command capabilities and enhanced data-sharing and disease surveillance systems. It has also refined public health protocols, environmental health mitigation strategies, and medical surge planning. This positions DPH to provide comprehensive, tailored public health support during the events.

Range of settings includes:

- Boston (Gillette) Stadium and surrounding areas
- FIFA Fan Festival™ on Boston City Hall Plaza
- Other fan events and celebrations
- Team base camps and training sites
- Hotels and visitor accommodations
- Transportation hubs
- Other high-traffic venues

Who is DPH working with?

With a focus on both prevention and readiness, DPH is working in close partnership with the following, among others:

- Local, state, and federal officials
- Local boards of health
- Hospitals and emergency medical services
- Urgent care centers, community health centers, and other health care providers
- State agencies throughout the Healey-Driscoll Administration
- Rhode Island Department of Health
- Community organizations
- Boston 26, the official Host City initiative for the FIFA World Cup 2026™

What is DPH preparing for?

DPH will be ready to handle a wide range of issues. This includes everything from minor illness to disease outbreaks to a mass casualty incident. Particular attention will be focused on:

- Infectious disease outbreaks, including infectious disease not commonly experienced in the United States
- Foodborne illness
- Mass casualty events and other events that may increase health care demand
- Weather-related hazards, including extreme heat, severe storms, and other environmental health concerns

This means enhanced disease surveillance and monitoring, environmental health oversight, extreme heat preparation, food safety monitoring, and ongoing coordination and communication with health care providers and public safety officials across the region.

Rhode Island Summer of Soccer™

Rhode Island expects to host national soccer teams and many Rhode Island Summer of Soccer™-related events (like watch parties), as well as to have fans staying in its hotels, dining in its restaurants, and flying through TF Green Airport (PVD).

"Our vision for the Summer of Soccer is about more than just a tournament; it's about positioning Rhode Island on the global stage," said Treasurer Diossa. "By hosting international teams just up the road in Foxboro and thousands of visitors, we are creating an economic engine that will benefit our small businesses and communities for years to come. Today, we are laying out the roadmap to ensure our state is ready to welcome the world."

Mayor Smiley detailed the City's pivotal role, specifically the launch of the 39-day, FIFA-approved, Providence Fan Zone. "This is an exciting moment for Providence and for Rhode Island," said Mayor Smiley. "FIFA's approval of our FanZone reflects the strength of our City as a welcoming, vibrant destination and our ability to deliver world-class experiences on a global stage. We are ready to welcome fans from across the globe to our Downtown waterfront and showcase everything that makes Providence special."

PVD FanZone

The PVD FanZone at Station Park will run on select dates from June 11 through July 19, anchoring Rhode Island's Summer of Soccer and welcoming fans from around the world to the capital city. The PVD Fan Zone is being produced by the City of Providence's Department of Art, Culture, and Tourism and the Providence Tourism Council. Set along the Providence River and steps from the Downtown Riverwalk, the PVD FanZone will feature watch parties, live music, interactive games, a professionally staffed bar, and a rotating lineup of local food vendors.

EMA Director **MARC PAPPAS** outlined an emergency preparedness plan, developed in coordination with local, state, and federal authorities to ensure a seamless and safe environment for all events.

"Over the past year, we've built a unified, multi-agency approach to ensure Rhode Island is fully prepared to support World Cup activities," said Director Pappas. "Through close coordination with our local, state, and federal partners, as well as our partners at the Massachusetts Emergency Management Agency, we continue to refine a comprehensive plan focused on delivering a safe and well-coordinated experience, grounded in strong communication, operational alignment, real-time situational awareness, and a shared common operating picture."

For more information, including specific event information in cities and towns, please visit risummerofsoccer.com ❖

The Rhode Island Dept. of Health (RIDOH) is taking steps to keep Rhode Islanders and visitors healthy this summer. RIDOH is working to ensure Rhode Island's public health and medical infrastructure can accommodate the needs of visitors to the area, to ensure Rhode Island is prepared to respond to any potential emergencies with public health and medical impacts, and to prevent threats to Rhode Island's food, water, and environment.

These steps include but are not limited to:

- Engaging staff, state agency partners, healthcare facilities and systems, emergency medical services, and community members in training and exercises that focus on capabilities to ensure readiness for this summer's events;
- Reviewing emergency response plans for all hazards, from infectious disease outbreaks to mass casualty events to bioterrorism attacks;
- Expanding monitoring trends in visits to healthcare settings for increases in infectious diseases, drug overdoses, injuries, heat-related illness, and other health outcomes;
- Expanding food safety trainings and resources and increasing food inspection and outreach;
- Enhancing response plans and expanding testing capacity for infections not typically seen in this region;
- Continuing wastewater monitoring for respiratory diseases like flu, RSV, COVID-19, avian influenza, and measles; and
- Engaging with partners across the state to ensure relevant and timely communications.

"Preparedness is at the core of public health," said RIDOH Director **JERRY LARKIN, MD**. "We have been working with partners in healthcare, public health, and all throughout Rhode Island and the region for several months to help ensure that Rhode Island's health infrastructure is as prepared as possible for the influx of visitors we expect over the coming weeks." ❖

Care New England announces workforce reductions amid escalating healthcare funding crisis in Rhode Island

PROVIDENCE — Care New England (CNE) announced on May 26th the elimination of more than 30 leadership and non-clinical positions across the system as part of a restructuring in response to ongoing financial pressures that continue to strain hospitals and healthcare providers throughout Rhode Island.

This difficult decision comes as hospitals across the state face unprecedented economic challenges driven by inadequate Medicaid reimbursement rates, rising labor and supply costs, and the increasing need to provide uncompensated care. CNE has been aggressively pursuing margin improvement initiatives to help offset an estimated $20 million in budget shortfalls in fiscal year 2026, while remaining committed to providing high-quality, accessible care to the communities it serves, according to **MICHAEL WAGNER, MD**, president and CEO.

"Current financial conditions have made additional cost-saving measures unavoidable, but decisions like these that affect our workforce are especially difficult because they impact valued employees, colleagues, and the patients and communities we serve," Dr. Wagner said. "However, the financial realities facing healthcare providers in Rhode Island require immediate action to preserve essential services and maintain long-term stability for a system uniquely committed to caring for even the most vulnerable Rhode Islanders."

Rhode Island's healthcare system is under growing pressure as Medicaid reimbursement rates remain among the lowest in the nation and significantly below the actual cost of care. Today, Medicaid provides coverage for approximately one in three Rhode Islanders, yet hospitals and providers continue to absorb substantial losses caring for these patients.

At the same time, proposed federal Medicaid changes threaten to increase the number of uninsured Rhode Islanders, further increasing uncompensated care costs and financial strain on healthcare systems statewide.

Dr. Wagner noted that Rhode Island now has a critical opportunity to help stabilize healthcare through a proposed $70 million state Medicaid investment that could unlock an additional $126 million in matching federal funds—bringing nearly $200 million into Rhode Island to support hospitals, physicians, community health centers, healthcare workers, and patient care services statewide.

"With Rhode Island facing a healthcare crisis, this investment represents an opportunity to protect patient access, preserve healthcare jobs, and strengthen hospitals and providers across the state," Dr. Wagner said. "Without meaningful action, Rhode Island risks continued erosion of healthcare access, longer emergency room wait times, reduced services, and additional job losses throughout the healthcare sector. We urge state leaders to prioritize investments that strengthen healthcare and protect access to care for all Rhode Islanders."

Care New England will continue to work closely with the employees affected by these changes, offering resources and assistance to them. The healthcare system remains focused on providing and maintaining the essential services that our patients and families depend upon to live healthy lives. ❖

Senate passes Sosnowski bill to create medical school at University of Rhode Island

STATE HOUSE — The Senate recently passed legislation introduced by Sen. **V. SUSAN SOSNOWSKI** that would establish a medical school at the University of Rhode Island. It's part of the Senate's 17-bill package of healthcare legislation centered on supporting Rhode Islanders in crisis, protecting patients and providers, and strengthening the state's health workforce.

Last year, a special legislative commission undertook an independent feasibility study that recommended the establishment of a public, M.D.-granting medical education program at URI, and outlined a proposed four-year, five-phase plan that would culminate in the launch of the program's charter class in autumn 2029.

The act (2026-S 3604) would establish the framework to create the medical school and provide an initial appropriation of $5 million as the first phase of a multi-year investment for its development.

"With Rhode Island facing a serious physician shortage, the recruitment and retention of doctors has become one of the state's top priorities," said Senator Sosnowski (D-Dist. 37, South Kingstown), who noted that by 2030, the state is projected to have a deficit of roughly 100 primary care providers. "URI has a good, solid foundation for establishing a medical school, and healthcare organizations are eager to partner with URI to create a community-based education model. This may be the most important investment the state makes in its future, its communities and its people."

ELLIJAH MCLEAN, manager of government relations and policy for United Way of Rhode Island, testified in support of the legislation, telling the Senate Committee on Health and Human Services that, "As of Dec. 31, 2025, Rhode Island had 17 Primary Care Health Professional Shortage Area designations affecting 257,218 residents; in those designated areas, only 74.29% of need is met, and 22 additional primary care practitioners are needed to remove the shortage designations. Strengthening an in-state physician pipeline is a practical long-term strategy to improve access to care and reduce pressure on higher-cost emergency settings."

The funding would be used for operating expenses and salaries related to hiring a founding dean and senior leadership, recruitment of core faculty and administrative staff, accreditation preparation and compliance activities, and curriculum planning and institutional development.

The measure now moves to the House of Representatives, where companion legislation (2026-H 8389) has been introduced by Rep. **KATHLEEN A. FOGARTY** (D-Dist. 35, South Kingstown). ❖

Senate establishes primary care workforce commission

STATE HOUSE — The Senate recently approved a resolution sponsored by Sen. **PAMELA J. LAURIA** to establish a permanent commission to explore ways to support retention of the state's primary care workforce and strengthen graduate medical education programs.

The bill is part of the Senate's 17-bill package of healthcare legislation centered on supporting Rhode Islanders in crisis, protecting patients and providers and strengthening the state's health workforce.

The creation of the commission was one of the recommendations of a previous study commission Senator Lauria led last year. That commission studied issues related to the primary care workforce, including the potential establishment of a medical school at University of Rhode Island, which it also recommended.

"As the work of our previous commission was coming to an end, it became apparent that there was so much more work to do in addressing the barriers to building the primary care workforce," said Senator Lauria (D-Dist. 32, Barrington, Bristol, East Providence). "We need to focus on establishing more graduate medical education opportunities here, because when people train here, they are more likely to stay and work here."

The previous commission recommended in its final report that this commission's initial charge should be "to review evidence and develop a comprehensive graduate medical education and workforce strategy to produce and retain skilled and committed primary care clinicians, along with the public policies needed to support that strategy." It suggested expanding residency and fellowship opportunities within Rhode Island's hospital systems, community health centers and federally qualified health center networks.

Under the resolution (2026-S 3057), this commission would be permanent, not a time-limited study commission. In addition to developing recommendations for establishing and financing sufficient primary care graduate medical education resources in the state, the resolution requires it to provide annual reports on Rhode Islanders' access to a usual source of care, the number and distribution of primary care clinicians practicing in the state, the numbers entering and leaving practice as well as an annual report on the status of Rhode Island's primary care institutional and clinical education resources and the programs supporting these students financially.

The commission will examine the entire primary care workforce, including physicians, nurse practitioners and physician assistants.

The 17-member commission would be made up of legislators, leaders from medical schools in the state and representatives of associations of medical professions, primary care providers and community nonprofits.

As a Senate resolution, the resolution does not require approval from the House of Representatives. ❖

Rhode Island a national leader in lung cancer screening, diagnosis, treatment

PROVIDENCE — Data from the American Lung Association's recently released "State of Lung Cancer" annual report indicate that Rhode Island remains a national leader in screening, early diagnosis, and treatment for lung cancer, a leading cause of cancer deaths The report showed that:

- In Rhode Island, 31.0% of those at high risk were screened, which was significantly higher than the national rate of 18.2%. Rhode Island has the highest screening rate in the country.
- The percentage of people alive five years after being diagnosed with lung cancer (the survival rate) in Rhode Island is 37.6%, which is significantly higher than the national rate of 29.7%, and best in the nation.
- In Rhode Island, 35.5% of cases are caught at an early stage, which is significantly higher than the national rate of 28.1%. It ranks 1st among the 50 states with data on diagnosis at an early stage, placing it in the top tier.
- Over the last five years, the survival rate in Rhode Island improved by 32%.

"In the last decade, we have seen incredible progress, including increases in lung cancer survival and early detection rates," said **DANIEL FITZGERALD, MPH**, director of advocacy, American Lung Association. "Rhode Island is a true leader in lung cancer care, but we have so much more work to do to ensure all residents have access to the best lung cancer outcomes."

"This progress is the result of the coordinated efforts of many organizations, as well as the dedication of Rhode Island's primary care professionals who make time to discuss annual lung cancer screening with patients," said Director of Health **JERRY LARKIN, MD**. "Lung cancer is preventable. Not smoking is the single most important thing people can do to prevent lung cancer. Help is available for anyone ready to quit."

Cigarette smoking is the number one risk factor for lung cancer. In the United States, cigarette smoking is linked to about 80% to 90% of lung cancer deaths. People who smoke cigarettes are 15 to 30 times more likely to get lung cancer or die from lung cancer than people who do not smoke. People who quit smoking have a lower risk of lung cancer than if they had continued to smoke, but their risk is higher than the risk for people who never smoked. Quitting smoking at any age can lower the risk of lung cancer.

Another important risk factor for lung cancer is indoor radon. Radon is a naturally occurring gas that forms in rocks, soil, and water. It cannot be seen, tasted, or smelled. When radon gets into homes or buildings through cracks or holes, it can get trapped and build up in the air inside. Exposure to radon causes lung cancer in smokers and non-smokers alike. Radon is the number one cause of lung cancer among non-smokers, according to EPA estimates. Overall, radon is the second leading cause of lung cancer in the United States. Testing is the only way to know if there are high levels of radon in your home.

Rhode Island's top national ranking in lung cancer screening is the result of coordinated efforts across our entire state —from primary care providers and specialists to imaging centers and community partners," said **TERRANCE HEALEY, MD**, of Rhode Island Medical Imaging. "Lung cancer screening is quick, painless, and widely available. When lung cancer is detected early, people have more treatment options and a much better chance at long-term survival. At Rhode Island Medical Imaging, we are proud to work closely with the Rhode Island Department of Health and healthcare providers statewide to make lung cancer screening easier to access so more Rhode Islanders can benefit from early detection and improved outcomes." ❖

Research led by Brown University Health identifies potential new therapeutic targets for pulmonary fibrosis

PROVIDENCE — A researcher at The Center for Advanced Lung Care at Brown University Health has led the publication of groundbreaking new findings in the journal *Science Translational Medicine* that could lead to new treatments for pulmonary fibrosis.

The study, a multi-institutional collaboration between investigators at Brigham and Women's Hospital, Massachusetts General Hospital, the University of Utah, and Vettore Biosciences, was led by **WILLIAM OLDHAM, MD, PhD, ATSF**, a pulmonologist in the Division of Pulmonary, Critical Care and Sleep Medicine at Brown University Health and physician-scientist at the Center for Advanced Lung Care.

The Brown University Health-led study focused on how lung scar tissue is made, specifically by specialized cells called myofibroblasts. The research showed that two proteins involved in cellular metabolism—known as monocarboxylate transporters, or MCT1 and MCT4—appear to be critical in driving the scarring process. When these transporters were blocked in both human lung cells and mouse models, a significant reduction in fibrosis-related activity and lung damage resulted.

"These results identify a promising new pathway that could potentially be targeted to treat pulmonary fibrosis," said Dr. Oldham. "By interrupting how these cells process and transport energy-related molecules, we are able to reduce the activity that leads to lung scarring in experimental models."

The study also identified a newer investigational compound known as VB253, which targets MCT4. In preclinical models, the compound showed effectiveness comparable to currently approved antifibrotic therapies.

Research showed that blocking MCT activity improved how

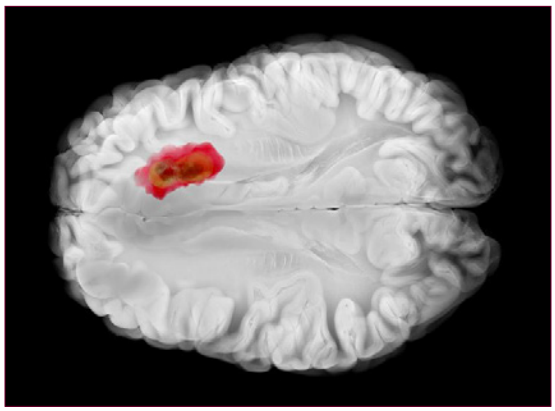
cells generate energy, reduced harmful oxidative stress, and decreased the buildup of fibrotic tissue in the lungs.

"These findings highlight the cutting-edge translational research underway within Brown University Health's Division of Pulmonary, Critical Care and Sleep Medicine where clinicians and scientists work together to accelerate discoveries that could improve patient care. This publication reflects the strength of our physician-scientist programs and our commitment to advancing therapies for complex lung disease and bringing hope to patients who currently have very limited options," said **COREY VENTETUOLO, MD, MS, ATSF, FAHA**, director of the Division of Pulmonary, Critical Care and Sleep Medicine at Brown University Health and the Warren Alpert Medical School of Brown University.

Pulmonary fibrosis affects tens of thousands of Americans each year and can significantly impact quality of life and long-term survival. Researchers say further studies will be needed before MCT-targeting therapies can be tested broadly in patients, but the findings represent an important step toward expanding future treatment possibilities. ❖

NIH-funded study suggests that testosterone suppresses brain tumor growth in males

BETHESDA, MD — In a new National Institutes of Health (NIH)-funded study, scientists at Cleveland Clinic discovered that hormones associated with male development may play a key role in limiting the growth of brain tumors in men. The research team found that the loss of androgen hormones, such as testosterone, in a preclinical model of glioblastoma drove tumor growth by inducing local inflammation and triggering the production of stress hormones. In an analysis of data from more than 1,300 men with glioblastoma, the authors found that supplemental testosterone was significantly associated with improved survival, which was consistent with their preclinical experiments.



"This outcome is a welcome surprise and may potentially offer a lead for new treatments for a kind of cancer that is deadlier in men," said **ANTHONY LETAI, MD, PhD**, director of NIH's National Cancer Institute (NCI).

As glioblastoma and androgens are simultaneously of higher prevalence in men, many researchers have suspected that these hormones are part of the problem. However, previous studies have not investigated the effects of androgens on tumor growth in the unique environment of the brain.

"The brain has evolved to keep stuff out and that includes immune cells from elsewhere in the body. It's a delicate tissue that often doesn't want huge immune reactions," said corresponding author **JUSTIN LATHIA, PhD**, a professor of cancer sciences and scientific director of the Brain Tumor Center at Cleveland Clinic.

Dr. Lathia and his colleagues discovered that androgens in the brain play a crucial role in regulating the organ's security systems, unlike other places in the body. Reducing androgens in mouse models of glioblastoma put a neuroendocrine system called the hypothalamus-pituitary-adrenal (HPA) axis into overdrive. This caused a spike in stress hormones that subsequently drove a subset of cells to further insulate the brain from the rest of the body.

The tightened security created an immunosuppressive environment in the brain, meaning fewer immune cells could reach the growing threat and thus, tumors progressed mostly unchecked. The authors found that testosterone did not produce the same effect in female mice.

The researchers identified that the HPA axis is likely triggered by inflammation in the hypothalamus caused by tumors in androgen-deficient mice. In future work, they intend to pin down exactly how tumors can induce this reaction in an entirely separate region of the brain.

Seeking to explore the relationship between androgens and brain cancer in humans, the researchers analyzed existing clinical data made available through the NIH/NCI Surveillance, Epidemiology, and End Results (SEER) database. They found that men with glioblastoma who were receiving supplemental testosterone for reasons unrelated to cancer demonstrated a 38% lower risk of death compared to patients not taking the same supplements.

Though not establishing a causal relationship, Dr. Lathia and his colleagues believe this observational finding together with their preclinical results warrant clinical trials for further investigation in humans. "An obvious follow-up study would be to find out whether androgen deprivation, which is a common treatment for cancer, is actually detrimental for glioblastoma," he said. ❖

Funding: NIH supported this research through NCI grants P01CA245705, F31CA264849, R01CA261995, R01CA236780, R01CA172382, U54CA274504, U01CA250481, and U01CA220378, National Institute on Aging (NIA) grants P30AG072959 and R00AG066862, and National Institute of Neurological Disorders and Stroke (NINDS) grant R35NS127083.

Reference: Juyeun Lee, et al. Androgen loss accelerates brain tumor growth via HPA axis activation. Nature. 2026. DOI: 10.1038/s41586-026-10451-5

NIH-supported project launches open-access tool to manage amblyopia in children

BETHESDA, MD — A group of pediatric eye disease researchers supported by the National Institutes of Health (NIH) has launched an open-access tool designed to help manage pediatric cases of amblyopia, a condition in which the brain fails to properly develop normal vision in one or both eyes early in life. It is the leading cause of preventable single-eye (monocular) vision loss, affecting three

of every 100 children in the nation. The tool is aimed at expanding access to evidence-based amblyopia clinical-decision-making expertise amidst a shortage of pediatric eye care specialists in the United States.

"This online tool quickly distills the relevant literature into individualized treatment advice for busy clinicians anywhere with internet access," said article lead author, **ALLISON SUMMERS, OD**, associate professor, Oregon Health & Science University, Portland.

During early childhood, our developing brains learn how to take images from each eye and fuse them into a single image to produce vision. Amblyopia can develop when the eyes are misaligned, when there is a significant difference in glasses prescription strength between the two eyes, when both eyes haven't received a needed high glasses prescription strength, or when vision is blocked (e.g., by a cataract or drooping eyelid).

If missed or left untreated, the poor vision can become permanent, with no amount of correction from glasses or contact lenses able to correct it in adulthood. Long-term, having abnormal vision in one eye can negatively affect school performance, employment status, and quality of life, and increase the burden of vision loss from other eye diseases or injuries.

Amblyopia typically responds well to treatment, with vision often reaching near-normal levels. Early detection leads to the best outcomes, yet treatment can be beneficial for children of any age and multiple options exist. Recent workforce studies show substantial variation in the geographic distribution of pediatric optometrists and pediatric ophthalmologists throughout the U.S., with a clustering of the specialists in some states, and none in others.

"We hope that this tool can be leveraged to minimize gaps in access to pediatric ophthalmic care," said **STACY L. PINELES, MD**, of the Jules Stein Institute at the University of California and co-chair of the Pediatric Eye Disease Investigator Group (PEDIG).

Known as the Amblyopia Navigator Decision-Support Instrument (ANDI), the tool is designed to guide any eye doctor through the diagnosis of amblyopia. Once amblyopia is diagnosed, ANDI helps to guide the eye care clinician without specialty training in pediatric eye care through management options. The tool helps the eye doctor determine the best glasses prescription for the patient based on a few clinical findings. The tool also helps the doctor determine how long to monitor whether glasses alone are improving vision, which can work for up to a third of children without any further treatment.

If glasses are not enough, ANDI walks the eye doctor through next steps: patching the stronger eye for a couple of hours a day, using atropine eye drops to temporarily blur the stronger eye, or considering newer digital treatments delivered through specially designed games or videos. If a child stops making progress, the tool advises whether to increase the intensity of treatment, switch approaches, reassess the glasses prescription, or refer to a specialist. It provides steps for follow-up visits and what signs of recurrence to watch for after treatment ends. The tool can be used at an initial visit, or any follow-up visit in their amblyopia care journey.

ANDI was developed by PEDIG, an NIH-funded research network with over 400 investigators, and it draws on evidence from 147 published studies. To access ANDI, go to https://public.jaeb.org/pedig. ❖

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New breast cancer research trial shows advantages of new technology

PROVIDENCE — Results from a large clinical trial involving Care New England's Women & Infants and Kent Hospitals, along with 22 other centers across the US, Canada, the UK, and Austria, demonstrated a promising new approach that may make breast cancer surgery more precise and effective.

JENNIFER GASS, MD, director of the Breast Health Center, Care New England, and principal investigator, led a study comparing the Breast Cancer Locator (BCL) System to conventional methods used for tumor localization in patients undergoing lumpectomy surgery. Partially conducted at the Breast Health Center at Women & Infants and Kent Hospitals, the study demonstrated that the BCL significantly improved surgeons' ability to remove the complete tumor with no presence of cancer at the margins of excised tissue and decreased the need for additional surgeries. Results were presented at the annual meeting of the American Society of Breast Surgeons.

Despite the best efforts of surgeons and radiologists, cancer is left behind following lumpectomy surgery in about 20–25% of all cases in the U.S. each year, requiring a second surgery to remove it completely.

"Breast cancers commonly have an irregular shape, and this study was designed to determine if giving the surgeon a more precise image of the tumor size and shape using a customized guidance device might enable more successful surgeries," said Dr. Gass. "The BCL technology enabled us to define the precise location and boundaries of even the most difficult tumors, and to view tumors in 3D before and during surgery. This detailed tumor guidance is information that has been missing with other methods until now."

Clinical Trial Highlights

- The Breast Cancer Locator (BCL) Trial encompassed 418 patients in the US, Canada, the UK, and Austria with non-palpable invasive breast cancer or DCIS treated with the BCL System or with conventional "wire localization" to identify tumor location.
- In the study, the following observations were made in comparing the BCL System to conventional wire localization:
- 32% reduction in the positive margin rate (PMR)—the rate of cancer being found at the edge of the excision following surgery—across all patients
- 34% reduction in the re-excision rate—or second surgeries—across all patients

Comparable safety profile

The foundation of the Breast Cancer Locator (BCL) System is an MRI taken with the patient lying face-up, in the same position as surgery, to obtain the most accurate view of the tumor shape, size, and location. The Breast Cancer Locator (BCL) System is then 3D-printed using the MRI imaging data to create a customized, breast-shaped device matching the unique shape of a patient's breast and the unique location and shape of the tumor. At the start of surgery, the BCL is placed on a patient's breast, and a surgeon uses ports in the device to guide them to the precise tumor margins during excision. The tumor is also viewable in 3D before and during surgery.

The Breast Cancer Locator is considered an investigational device in the U.S. and is limited by U.S. law to investigational use only. ❖

The Breast Cancer Locator (BCL) System is 3D-printed using MRI imaging data to create a customized, breast-shaped device matching the unique shape of a patient's breast and the unique location and shape of the tumor. [IMAGES COURTESY OF CARE NEW ENGLAND]

McKee budget amendment submitted for $1.6M for Newport Hospital Birthing Center

PROVIDENCE — The McKee Administration submitted a budget amendment to provide $1.6 million in additional funding to the Newport Hospital's Noreen Stonor Drexel Birthing Center. The funding is exclusive to the birthing center and contingent on the continued operation of the center.

The Governor's proposal comes in direct response to the financial challenges identified by Brown University Health regarding the continued operation of the birthing center.

"My administration continues to prioritize women's health care, and that includes maternal health care," said Governor **DAN McKEE**. "We understand what a critical community resource the Newport Birthing Center is, and while our behind-the-scenes advocacy with Brown University Health helped keep the Newport Birthing Center open to date, this proposal puts additional state resources behind protecting access to local maternal health care services for Rhode Island families."

Recently, Brown University Health made public its call for $4.9 million in additional funding in order to keep the birthing center open. The Governor's proposed amendment aligns with the bill submitted by Representative **LAUREN CARSON** (D-Dist. 75, Newport) that apportioned the $4.9 million between three pools—State General Revenue, Brown University Health, and philanthropy. ❖

Appointments

Francesca L. Beaudoin, MD, appointed dean of Brown University's School of Public Health

PROVIDENCE [BROWN UNIVERSITY] — **FRANCESCA L. BEAUDOIN, MD**, has been appointed the next dean of Brown University's School of Public Health (SPH), effective June 1. Dr. Beaudoin has been serving in the role on an interim basis since Jan. 1, 2026.

She will oversee the school's four academic departments, 13 research centers, seven master's programs, four doctoral programs and the undergraduate concentrations in public health and statistics, while driving the school's strategic planning in collaboration with its faculty.

In announcing Beaudoin's appointment in a May 19th, message to the Brown community, Provost Francis J. Doyle III described Beaudoin as an exceptional scholar, a dedicated clinician and a proven academic leader who deeply embodies Brown's mission of translating world-class research into real-world impact. She was named to the role after a national search.

She will oversee ongoing efforts to grow the size of the faculty and expand a research portfolio that currently ranks among the top 10 schools of public health for federal funding from the National Institutes of Health (NIH).

Reporting directly to the provost, Dr. Beaudoin will serve as a member of the provost's Academic Priorities Committee; the Tenure, Promotions and Appointments Committee; and the President's Cabinet and President's Executive Committee, while also stewarding the SPH Board of Governors.

A faculty member at Brown since 2010, Dr. Beaudoin holds joint professorships in epidemiology at SPH and emergency medicine at the Warren Alpert Medical School. Her research focuses on the intersection of pain management, the opioid epidemic and acute trauma recovery and has drawn funding from the NIH, the Department of Defense and numerous philanthropic foundations.

Dr. Beaudoin has authored more than 190 peer-reviewed articles, served as a member of the U.S. Food and Drug Administration Anesthetic and Analgesic Drug Products Advisory Committee, served as a senior adviser for the Institute for Clinical and Economic Review, and is a member of the board of directors of Blue Cross Blue Shield of Rhode Island. ❖

Jinnette Dawn Abbott, MD, MSCAI, named president of Society for Cardiovascular Angiography & Interventions

PROVIDENCE — The Society for Cardiovascular Angiography & Interventions (SCAI) has named **JINNETTE DAWN ABBOTT, MD, MSCAI**, president. She is director of the Interventional Cardiology and Cardiac Catheterization Laboratories of the Brown University Health Cardiovascular Institute.

Among a handful of women to achieve this national designation, Dr. Abbott was appointed for 2026–2027 during the SCAI 2026 Scientific Sessions & CAIC-ACCI Summit held recently in Montreal.

"Training is the foundation of everything we do in interventional cardiology, and we have an opportunity right now to strengthen that foundation for the next generation. That means supporting our fellowship programs, working closely with program directors, and ensuring that training reflects the realities of modern practice. At the same time, we need to be thoughtful about how we grow the workforce, using real data to guide decisions and ensure that we are building a sustainable future for the field," Dr. Abbott said.

Focused on advancing interventional cardiology education, physician training, and cardiovascular research nationally and internationally, Dr. Abbott has held several SCAI leadership roles impacting its education and workforce strategy. She co-led establishment of the Interventional Cardiology Match, strengthened engagement with fellowship programs nationwide, and championed initiatives supporting early-career interventional cardiologists. Chair of the SCAI Scientific Sessions, Dr. Abbott serves on the Women in Innovations (WIN) Committee and was an inaugural participant in SCAI's Emerging Leader Mentorship (ELM) program, becoming the first physician to progress from mentee to mentor to president of the organization. Dr. Abbott also serves as Deputy Editor of *Circulation: Cardiovascular Interventions*. ❖

Appointments

Eric Morrow, MD, PhD, appointed founding director of the Lurie Autism Institute in Philadelphia

PROVIDENCE [BROWN UNIVERSITY] — **ERIC MORROW, MD, PhD**, founding director of the Center for Translational Neuroscience and a nationally recognized leader in autism and neurogenetic research, has been appointed founding director of the Lurie Autism Institute, a joint initiative of the University of Pennsylvania Perelman School of Medicine and the Children's Hospital of Philadelphia. He will depart Brown August 31, 2026. In his new role, Dr. Morrow will lead the Lurie Autism Institute to drive discoveries with transformative impact for people living with autism spectrum disorder.

Dr. Morrow came to Brown in 2009 from Harvard Medical School following a national search conducted through the Brown Institute for Brain Science, now the Robert J. and Nancy D. Carney Institute for Brain Science. During the next decade, he built an internationally recognized research and academic program that bridged basic science and clinical care, with interdisciplinary appointments in the Department of Molecular Biology, Cell Biology and Biochemistry, as well as the departments of Psychiatry and Human Behavior and Neuroscience. He was appointed the Mencoff Family Professor of Biology in 2018.

Dr. Morrow's research has focused on understanding the genetic and biological foundations of autism and related neurodevelopmental disorders, with a career-long commitment to improving the lives of children and adults with profound autism. His work has engaged families around the world and has contributed to advances in understanding rare genetic conditions, including Christianson syndrome and GPT2 deficiency. He has authored more than 100 peer-reviewed publications in leading journals, and his contributions have been recognized nationally, including with the Presidential Early Career Award for Scientists and Engineers during the Obama Administration.

As founding director of the Center for Translational Neuroscience, Dr. Morrow played a central role in fostering collaboration between the Carney Institute for Brain Science and The Warren Alpert Medical School. He has been deeply committed to faculty development, mentoring junior faculty through the tenure process, and supporting interdisciplinary research initiatives. He has mentored dozens of undergraduate and graduate students and received the Psychiatry Research Mentor Award for his commitment to training the next generation of scientists.

Dr. Morrow has also been deeply committed to advancing understanding and care for individuals with neurodevelopmental disorders and their families. He founded the Developmental Disorders Genetics Research Program, creating a vital bridge between molecular research on campus and patient-centered research at Emma Pendleton Bradley Hospital. He was also a founding leader of the Rhode Island Consortium for Autism Research and Treatment (RI-CART), a statewide partnership funded by the Simons Foundation for Autism Research Initiative, and served as founding co-director of the Autism Initiative within the Hassenfeld Child Health Innovation Institute at Brown.

In addition to his research leadership, Dr. Morrow has been a dedicated educator and mentor. He developed and taught widely regarded courses in human genetics and genomics, founded advanced undergraduate offerings in the field, and led the Bench-to-Bedside Seminar Series within the Neuroscience Graduate Training Program.

Dr. Morrow has also been a prominent figure in national and international autism research efforts, serving as a founding member of the Scientific Advisory Board for the Autism Science Foundation and contributing to major initiatives through the Simons Foundation, the Eagles Autism Foundation, the NIH Study Section on Developmental Brain Disorders, and global research collaborations. ❖

Recognition

VA Providence wins national Go Red competition

PROVIDENCE — The VA Providence Healthcare System has been named the national winner of the VA Office of Women's Health Go Red competition, recognizing the facility's outstanding efforts to promote heart health awareness, education, and outreach for Women Veterans throughout American Heart Month.

Throughout February, VA Providence coordinated an expansive Go Red campaign that brought together VA staff, community partners, and Veterans across Rhode Island and southeastern Massachusetts. The initiative featured educational events, healthy teaching kitchen classes, Whole Health programming, outreach activities, social media engagement, and collaborations with organizations including the American Heart Association, Providence Vet Center, Cape Cod Vet Center, and Rhode Island FC.

The campaign emphasized the importance of cardiovascular health, preventive care, exercise, nutrition, and awareness of women-specific heart disease symptoms while encouraging Veterans to take an active role in their overall wellness.

"This recognition reflects the passion and dedication of our staff who continuously go above and beyond to improve the lives of Veterans," said VA Providence Director **LAWRENCE CONNELL**. "The Go Red campaign demonstrated the power of collaboration, innovation, and community engagement in advancing Women Veteran health care. I'm incredibly proud of our team for earning this national recognition."

The award highlights VA Providence's continued commitment to expanding Women Veteran services and creating impactful outreach opportunities that connect Veterans with resources designed to improve long-term health and wellness. ❖

Kent Hospital's Emergency Department recognized with Pediatric Innovator designation

WARWICK — Kent Hospital's Emergency Department has been recognized as a Pediatric Innovator, the highest designation awarded by the Rhode Island Department of Health's Emergency Medical Services for Children (EMSC) Program. This distinction honors emergency departments that demonstrate exceptional commitment to delivering high-quality, safe, and effective care for pediatric patients.

The Pediatric Innovator status distinguishes Kent Hospital as "Always Ready for Children," part of a state and region-wide initiative designed to help improve the quality, safety, and readiness of pediatric emergency care. The program supports emergency departments in meeting the unique needs of children during medical emergencies.

Kent Hospital's Emergency Department is always ready for every patient who comes through our doors, no matter what age," said **DAREN GIRARD, MD**, chief of emergency medicine. "Each year, thousands of pediatric patients come to Kent with high fevers, broken bones, allergic reactions, and sudden illnesses. Our team is equipped to respond with skill, speed, and compassion."

The Pediatric Recognition Program includes three levels of designation: Ready, Engaged, and Innovator. As the highest level, Pediatric Innovator is awarded to emergency departments that demonstrate advanced standards of care, a strong focus on continuous quality improvement, and ongoing pediatric-specific education and training.

"Achieving Pediatric Innovator reflects Kent Hospital's dedication to delivering exceptional care for children," said Dr. Girard. "Our physicians, nurses, and pharmacists worked together to ensure our policies, procedures, and equipment meet the standards set by the EMSC Program. This multidisciplinary effort underscores our commitment to continuous improvement and innovation in pediatric emergency services."

"It has been shown that states that have implemented pediatric recognition programs consistently report higher pediatric readiness scores and improved patient outcomes, including reductions in pediatric mortality rates," said **JERRY LARKIN, MD**, director of the Rhode Island Department of Health. "The health professionals at Kent Hospital should be congratulated for their excellence, and administrators at Kent Hospital should be congratulated for their work to develop a culture of continuous improvement in the area of pediatric emergency care." ❖

Recognition

Brown University Health hospitals receive 'A' grade for patient safety from Leapfrog

PROVIDENCE — Three hospitals within the Brown University Health system received an 'A' Hospital Safety Grade from The Leapfrog Group, a national nonprofit upholding the standard of patient safety in hospitals and ambulatory surgery centers. The three hospitals gaining this distinction in patient safety are Rhode Island Hospital, The Miriam Hospital, and Saint Anne's Hospital in Fall River, MA.

"I'm incredibly proud of the team at Rhode Island Hospital for their continued commitment to delivering high-quality care and ensuring patient safety, as reflected in our Leapfrog 'A' safety grade for Spring 2026," said **SARAH FROST**, chief of hospital operations and president of Rhode Island Hospital and Hasbro Children's. "Earning 'A' safety grades alongside The Miriam Hospital and Saint Anne's Hospital underscores Brown University Health's systemwide dedication to excellence. I'm deeply grateful to our care teams for the exceptional work they do every day to keep our patients safe."

"We are thrilled and immensely proud to once again earn an 'A' safety grade from the Leapfrog Group, a powerful reflection of the dedication, expertise, and compassion our team at The Miriam Hospital brings to their work every single day," said **MARIA DUCHARME, DNP, RN**, president of The Miriam Hospital and chief quality executive at Brown University Health. "This recognition reinforces our unwavering commitment to patient safety and to delivering exceptional, 'wow' care to every patient and every member of our community."

The Leapfrog Group, an independent national watchdog organization, assigns an "A," "B," "C," "D" or "F" grade to general hospitals across the country based on over 30 national performance measures reflecting errors, accidents, injuries and infections, as well as systems hospitals have in place to prevent harm.

The Leapfrog Hospital Safety Grade is the only hospital ratings program based exclusively on hospital prevention of medical errors and harm to patients. The grading system is peer-reviewed, fully transparent and free to the public. Grades are updated twice annually, in the fall and spring. ❖

Westerly Hospital earns 'A' safety grade from Leapfrog

NEW HAVEN, CT — Bridgeport Hospital, Greenwich Hospital, Yale New Haven Hospital and Westerly Hospital (RI) earned an "A" Hospital Safety Grade from The Leapfrog Group, a national nonprofit watchdog focused on patient safety, underscoring Yale New Haven Health's ongoing commitment to delivering the safest possible care.

The Leapfrog Hospital Safety Grade assigns letter grades ranging from "A" to "F" to general hospitals nationwide, based on evidence-based measures focused exclusively on preventable medical errors, injuries and infections.

"Earning top safety grades across our health system reflects a deep and sustained commitment to protecting our patients from harm," said **CHRISTOPHER O'CONNOR**, CEO, Yale New Haven Health. "Safety is not a program at our hospitals – it is a foundational value that guides everyday actions, from infection prevention and medication safety to consistently following stringent clinical protocols."

High-reliability care depends on thousands of decisions made correctly every day," said **DEBORAH RHODES, MD**, senior vice president and chief quality officer, Yale New Haven Health. "Our teams have hardwired patient safety into daily practice and these grades reflect their vigilance, teamwork and unwavering focus on quality."

Yale New Haven Health continues to prioritize key patient safety initiatives, including falls prevention, reduction of hospital-acquired infections (HAIs) and prevention of post-surgical complications, supported by robust data, clinician engagement and system-wide accountability. ❖

Recognition

All Brown University Health Hospitals in Rhode Island achieve 4Star CMS rating

PROVIDENCE — Brown University Health has reached a significant quality milestone: every acute care hospital in its Rhode Island system now holds a 4star rating from the U.S. Centers for Medicare & Medicaid Services (CMS). The achievement follows CMS's recent announcement elevating Rhode Island Hospital from 3 to 4 stars—an improvement that brings all of Brown Health's Rhode Island hospitals into this high level of national performance.

The CMS Star Ratings, featured on Medicare's Care Compare website, serve as one of the most visible and trusted tools for patients evaluating hospital quality. By distilling complex performance data into a simple star scale, the ratings help individuals confidently choose where to receive care.

"Achieving a 4star rating across our Rhode Island hospitals more accurately reflects our commitment to excellence and continuous improvement," said **SARAH FROST**, chief hospital officer at Brown University Health and president of Rhode Island Hospital and Hasbro Children's. "Patients rely on these ratings to make informed decisions about their care, and we are proud of the highquality care our teams deliver to them every day."

"We know our communities depend on these CMS ratings to guide their healthcare choices, and we are honored that the public can use them to best understand how our teams strive to deliver consistent, highquality care every single day," said **MARIA DUCHARME, DNP, RN**, chief quality executive at Brown University Health and president of The Miriam Hospital.

CMS evaluates hospitals across a broad set of measures, with the greatest emphasis placed on mortality, safety of care, readmissions, and patient experience. Hospitals submit extensive quality data, which CMS analyzes to determine each organization's overall rating. ❖

VA hospitals earn record-high quality ratings in 2026 CMS report

WASHINGTON, DC — The Department of Veterans Affairs today announced that 78% of VA hospitals that received an Overall Hospital Quality Star Rating earned four or five stars in the latest annual report from the Centers for Medicare & Medicaid Services. That's the highest percentage since CMS first started rating VA facilities in 2023. The Providence VA Medical Center received a 4-star rating.

Additionally, VA accounted for nearly 15% of all 5-star rated hospitals in the 2026 report. The new report marks the fourth consecutive year that VA facilities have outperformed non-VA facilities, and it's the second year in a row that no VA hospital received a one-star rating. The percentage of VA hospitals that received an Overall Hospital Quality Star Rating and received four or five stars has grown dramatically during the Trump Administration:

- 2023, 67%
- 2024, 58%
- 2025, 77%
- 2026, 78%

Among other improvements, VA has:

- Enrolled more than 140,000 new Veterans in VA healthcare in 2026.
- Opened 35 new VA health care facilities since Jan. 20, 2025 expanding health care access for Veterans around the country.
- Reduced the backlog of Veterans waiting for VA benefits by 70% since Jan. 20, 2025.
- Completed 82,083,918 direct care appointments in FY2025, up 4.1% from FY2024.
- Offered Veterans more than 2.5 million appointments outside of normal operating hours, giving Veterans more timely and convenient options for care.
- Permanently housed 51,936 homeless Veterans across the country in FY2025, the highest total in seven years. ❖

Places

Butler Hospital announces $1M gift for Memory and Aging Program

PROVIDENCE — Butler Hospital has received a $1 million anonymous gift from a grateful donor in support of its Memory and Aging Program (MAP). This meaningful investment will provide new resources to advance dementia research and expand care for individuals and families affected by memory disorders.

The Memory and Aging Program is internationally recognized for its groundbreaking clinical research and leadership in diagnosing and treating Alzheimer's disease and other forms of dementia. This philanthropic investment will support studies on disease progression, advance potential treatments, and expand services for patients and caregivers.

"This gift will allow us to deepen our research efforts and strengthen the clinical support we provide to patients and families navigating these challenging diseases," said **EDWARD HUEY, MD**, program director.

STEPHEN SALLOWAY, MD, MS, the program's founding director and a nationally recognized leader in Alzheimer's research, said the gift comes at a pivotal moment in the field. "We have opened a new era for Alzheimer's disease, leading to early and accurate molecular diagnosis with treatments to slow the rate of cognitive decline," Dr. Salloway said. "This gift will help us test new approaches to promote brain health and new strategies for delivering drugs to the brain, leading to safer and more powerful treatments with the goal of treating early enough to prevent Alzheimer's disease."

Butler Hospital President and COO **MARY MARRAN, MS OT, MBA**, said the gift will have a lasting impact on patients and families coping with memory disorders.

"We are deeply thankful for this extraordinary act of generosity," Marran said. "Programs like MAP provide hope and guidance to families confronting devastating illnesses. This investment will strengthen our ability to deliver compassionate care while advancing research that could change the future of dementia treatment." ❖