

LGBTQ+ Health Content in US Residency Curricula: A Scoping Review

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ABSTRACT

Background The care of lesbian, gay, bisexual, transgender, queer, and other sexual and gender minority (LGBTQ+) patients is heavily influenced by clinician training, but the landscape of LGBTQ+ health teaching in graduate medical education is poorly understood.

Objective To describe the current state of LGBTQ+ health teaching across specialties within graduate medical education in the United States.

Methods In February 2024, the authors performed a scoping review of the literature across 6 databases. Two authors extracted and synthesized data on the amount, scope, and modality of LGBTQ+ didactic and clinical teaching across residency programs, as well as educational interventions designed for resident learners.

Results Fifty-two articles met inclusion criteria. In the past decade, the number of specialties with data on LGBTQ+ health teaching in residency increased from 4 to 12, encompassing both medical and surgical fields. Curricular hours and topics covered were highly variable even within specialties, but there were common educational gaps in transgender health and clinical exposure. Program director attitudes, region of training, and presence of LGBTQ+ identifying faculty were frequently linked to curricular inclusion of LGBTQ+ health. Surgical specialties appeared to lag medical specialties in amount and breadth of teaching, but had a stronger focus on gender-affirming surgical care. Educational interventions analyzed were highly diverse and trended toward inclusion of actual or simulated patient care alongside didactic teaching.

Conclusions While attention to LGBTQ+ health in graduate medical education is increasing, critical gaps remain in the amount, scope, and delivery of LGBTQ+ health content across and within specialties.

Introduction

Individuals that identify as lesbian, gay, bisexual, transgender, queer, and other sexual and gender minorities (LGBTQ+) experience several health and health care disparities that medical education has incompletely addressed. Clinician education, comfort, bias, and competency are major barriers to equitable care for LGBTQ+ populations.¹⁻³

In the United States, undergraduate medical education (UME) has seen a number of advocacy and implementation efforts to incorporate LGBTQ+ content into medical school curricula, with a significant increase in median curricular hours between 2011 and 2022.⁴⁻⁶ In 2019, the Accreditation Council for Graduate Medical Education (ACGME) revised core competencies to include sexual and gender identity within issues of diversity and inclusion, but there has been little guidance on implementing LGBTQ+ health education across residency programs.⁷ The vast

majority of literature on LGBTQ+ medical education is UME-focused.⁸⁻¹⁰ A 2021 call for LGBTQ+ health content in graduate medical education (GME) noted that up to 70% of residency programs do not offer LGBTQ+-related training and shared clinical considerations by specialty.¹¹ This article also demonstrated the disconnect between didactics and clinician competency and comfort in caring for LGBTQ+ patients, suggesting a gap in longitudinal teaching and clinical exposure during residency.¹¹

Given residency is the clinical cornerstone of medical training, LGBTQ+ health teaching should naturally extend beyond UME into GME where clinical exposure is abundant. Multiple articles across specialties have commented on the necessity of LGBTQ+-specific training during residency, yet implementation is limited and often siloed by specialty without specific requirements by accrediting organizations.¹¹⁻¹³ Additionally, the amount of didactic and clinical teaching, teaching modalities, and topics covered across various specialties remain unclear. Prior literature has evaluated the impact of LGBTQ+ didactics on UME and GME learner knowledge and attitudes toward LGBTQ+ patients, but there is still a poor understanding of the

DOI: <http://dx.doi.org/10.4300/JGME-D-24-00689.1>

Editor's Note: The online supplementary data contains the scoping review strategy, surveys of LGBTQ+ health inclusion in residency teaching, and education interventions across specialties.

landscape of didactic content and learning modalities specific to GME, especially given the variation and breadth of residency training.^{8,10,14} There is also a dearth of published curricular resources and models for LGBTQ+ health education designed for resident learners.^{11,15}

Synthesizing the current state can help identify progress made in LGBTQ+ health teaching in GME, the gaps remaining, as well as best practices and next steps in ensuring US resident physicians across medical and surgical specialties receive adequate training in caring for LGBTQ+ populations.

Methods

Our primary research goal was to describe the current state of LGBTQ+ health teaching in residency education in the United States. Given the inherent variability across residency specialties, we utilized a scoping review approach. We followed PRISMA-ScR (Preferred Reporting Items for Systematic Reviews and Meta-Analyses extension for Scoping Reviews) guidelines and the methodological framework by Arksey and O'Malley, refined by Levac et al.¹⁶⁻¹⁸ Our review protocol can be found on Open Science Framework.¹⁹

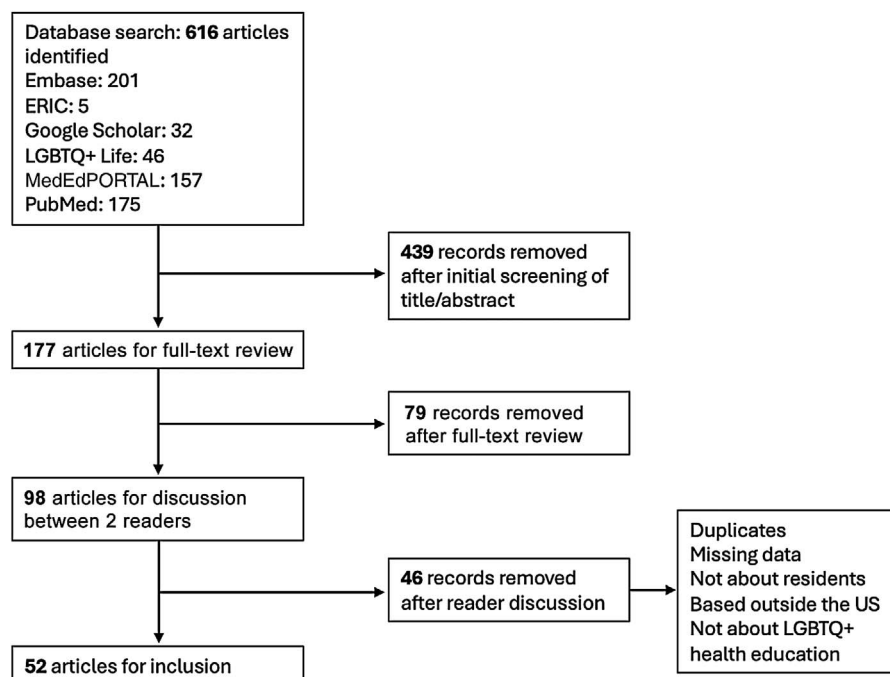
Search Strategy

After consultation with a clinical librarian, we conducted a literature search of 6 databases: Embase, ERIC, Google Scholar, LGBTQ+ Life, MedEdPORTAL, and PubMed.

The search was performed on February 5, 2024 and included studies published on or before this date (FIGURE). Search procedures involved 2 main concepts, LGBTQ+ health and GME, and comprehensive search terminology was used alongside MeSH terms, when possible, to capture articles that used outdated or historical terms (online supplementary data). We included US residency-based articles written in English surveying or discussing LGBTQ+ health curricula. We defined “curricula” to include any form of LGBTQ+ health-focused didactics (eg, classroom or conference-based teaching) or clinical exposure (eg, direct patient care or observership). Articles on undergraduate medical education or fellowship training, identity-based perspectives of LGBTQ+ residents (eg, experiences being LGBTQ+ rather than experiences with LGBTQ+ health education), residency demographics, or residency recruitment were excluded from analysis.

Outcomes

Outcomes of interest for studies surveying LGBTQ+ health education across specialties included the amount of dedicated curricular time, LGBTQ+ health topics covered, common teaching modalities, and covariates of curricular inclusion. For didactic- or intervention-based articles, outcomes of interest included specialties addressed, length and number of sessions, teaching modalities, teaching content, and assessment methods.



FIGURE

Search Strategy Flowchart

Abbreviation: LGBTQ+, lesbian, gay, bisexual, transgender, queer, and other sexual and gender minority.

Data Management, Abstraction, and Analysis

Zotero and Google Drive were used to store and handle records. Two authors (E.H., C.O.D.) performed independent title and abstract screening as well as full-text review of the articles, and met to discuss articles that did not clearly meet full inclusion criteria, with consensus input from 2 additional authors (J.M., M.L.M.) when discrepancies arose. Critical appraisal of the data was not performed because many of the articles were program- or intervention-based, making our review of the data purely exploratory. Data abstraction was performed by 2 authors (E.H., C.O.D.) and verified by a third author (J.M.). All authors participated in thematic analysis, with 2 authors (E.H., C.O.D.) completing independent analyses in a first round, followed by a discussion between the 2, and then in discussion during a third round with all authors to agree on themes and synthesis of data.

Results

We identified 52 articles on LGBTQ+ health teaching specific to GME. Of these articles, 31 surveyed LGBTQ+ topic inclusion within residency training. Twenty-one articles focused on describing or evaluating specific curricular interventions within one or more specialties. TABLE 1 summarizes article characteristics.

Inclusion of LGBTQ+ Health in Residency Teaching

Historical and Current State: Only 4 specialties surveyed residency programs on LGBTQ+ health teaching before 2015, 10 specialties did so by 2020, and 12 by the time of this review. Surveys of program directors or residents were found in the following fields: dermatology, emergency medicine, family medicine, internal medicine, internal medicine-pediatrics (med-peds), obstetrics and gynecology (OB/GYN), oral and maxillofacial surgery (OMFS), otolaryngology, pediatrics, plastic surgery, psychiatry, and urology (online supplementary data TABLE 1). Most studies were conducted on a single specialty by investigators within their own fields. A majority used a cross-sectional approach to capture national data, while some were single- or multi-site studies. While a few surveyed multiple specialties, none were led by specialty organizations or the ACGME.

A 2011 survey across numerous specialties found that physicians reported an average of 3.18 hours of residency didactic content related to lesbian health, 4.98 hours related to gay men's health, 1.41 hours related to bisexual health, and 1.28 hours related to transgender health, with 60 to 68% reporting no

TABLE 1

Summary Characteristics of Publications Included for Review (N=52)

Publication Characteristic	n (%)
Publication year ^a (N=52)	
2020-2023	28 (54)
2015-2019	19 (37)
2010-2014	2 (4)
2005-2009	1 (2)
Before 2005	2 (4)
Specialty (N=52)	
Dermatology	4 (8)
Emergency medicine	2 (4)
Family medicine	6 (11)
General surgery	1 (2)
Internal medicine	7 (12)
OB/GYN	5 (10)
Otolaryngology	2 (4)
OMFS	1 (2)
Pediatrics	5 (10)
Plastic surgery	2 (4)
Psychiatry	4 (8)
Urology	1 (2)
Radiology	1 (2)
Multiple surgical specialties	3 (5)
Multiple medical specialties	4 (8)
Multiple medical and surgical specialties	4 (8)
Surveys of LGBTQ+ health education: study methods (N=31)	
Convenience sample/snowballing, national ^b	1 (3)
Cross-sectional survey, selected sites	3 (10)
Cross-sectional survey, national ^b	21 (67)
Review (eg, systematic, scoping, narrative)	4 (13)
Single-site survey	2 (7)
Educational interventions: teaching methods ^c (N=21)	
Didactics/conference	10 (27)
Workshop	3 (8)
Online module	4 (11)
Case-based discussions	9 (24)
Clinical observership	6 (16)
Standardized patient	3 (8)
Patient panel	2 (6)
Educational interventions: assessment ^e (N=21)	
Knowledge	12 (48)
Confidence	3 (12)
Allyship/attitudes	2 (8)
Passing examination	1 (4)
None or not applicable	7 (28)

^a Articles prior to 2020 were grouped in 5-year intervals to highlight increasing work in this area.

^b National surveys were conducted through professional organizations or via national (eg, program director) listservs.

^c Educational interventions may include multiple teaching or assessment methods. Abbreviations: OB/GYN, obstetrics and gynecology; OMFS, oral and maxillofacial surgery; LGBTQ+, lesbian, gay, bisexual, transgender, queer, and other sexual and gender minority.

gay or lesbian health exposure and 79% of physicians reporting no bisexual or transgender health exposure.²⁰

While there are no updated data on aggregate residency didactic hours across specialties, recent reviews highlight the persistent gap in content on the care of transgender and gender expansive identities.^{10,14} Commonly covered topics include sexual health (including HIV and sexually transmitted infections) with much less emphasis on gender-affirming care. A shared theme across medical and surgical fields over time is the lack of clinical exposure, particularly in transgender health.^{10,14,20} Nevertheless, there has been increased attention to LGBTQ+ content across GME, including from specialties not previously represented in the literature—notably dermatology, OB/GYN, OMFS, and pediatrics. Lectures and journal clubs are the most common modality for delivering LGBTQ+ didactics.²¹⁻²³ Limited data surveying residents and program directors show variability in preferred learning modalities, with a general preference toward lectures from visiting experts, small group or case-based discussion, and online modules.²⁴⁻³⁰ The need for additional clinical exposure is frequently mentioned.^{25,29,30}

Regional Differences and Curricular Barriers: Among program directors, various factors have been associated with the inclusion of LGBTQ+ health in residency teaching. Regional influence on exposure to LGBTQ+ content differs by specialty, with higher exposure in the Western United States in otolaryngology, higher exposure in the Northeast and Midwest for plastic surgery, higher exposure in the West and Midwest for urology, and no significant regional differences for emergency medicine, OB/GYN, OMFS, or psychiatry.^{21,23,27,31-34} Within family medicine, program directors in the Midwest and South are less likely to consider gender-affirming care as a core competency.³⁵ Among emergency medicine program directors, the perception that LGBTQ+ health education was not needed decreased from 59% to 15% between 2013 and 2020.^{21,36} Other commonly cited barriers to incorporating LGBTQ+ health teaching include curricular crowding and the lack of faculty with expertise.^{12,21-24,26,35,37} The presence of out LGBTQ+ faculty has also been associated with resident education in LGBTQ+ health.^{12,21,27}

Medical Specialties: Except for dermatology, medical specialties that have published on this topic are more generalized (emergency medicine, family medicine, internal medicine, med-peds, pediatrics) or historically related to LGBTQ+ diagnoses (psychiatry). Curricular hours, topics, and notable trends for medical specialties can be found in TABLE 2. Overall, a

majority of programs offer LGBTQ+ health teaching to resident learners, but desired curricular hours exceed actual hours, particularly for dermatology, emergency medicine, and internal medicine. There is increasing coverage of comprehensive LGBTQ+ health topics across the lifespan except within emergency medicine, for which topics have not been surveyed. As found in one study, curricular hours are similar among primary care specialties (family medicine, internal medicine, med-peds, pediatrics).¹² Within these fields, there is a need for increased education on reproductive health and gender-affirming surgical considerations.

Surgical Specialties: Curricular hours, topics, and notable trends for surgical specialties can be found in TABLE 3. Surgical specialties surveyed focused primarily on transgender and gender-affirming care over other aspects of LGBTQ+ health. Logically, these specialties trend toward higher surgical content exposure over psychiatric or medical aspects of care, but the amount of didactic versus clinical teaching is often imbalanced. In a systematic review of program directors across surgical specialties, 48% of programs offer gender-affirming surgery or gender-affirming care content in residency didactics or clinical exposure.⁴⁹ An additional review found that plastic surgery and urology residents report more exposure to transgender health than residents in OB/GYN, OMFS, or otolaryngology.⁵⁰

Education Interventions Across Specialties

We reviewed individual interventions to incorporate or teach LGBTQ+ health into the following specialties: dermatology, emergency medicine, family medicine, general surgery, internal medicine, med-peds, pediatrics, psychiatry, and radiology (online supplementary data TABLE 2). Most interventions addressed medical specialties (n=19); of the 2 interventions that addressed surgical trainees, both involved allyship training among general surgery residents. Multiple interventions (n=8) included clinical teaching, either by direct patient care or simulation.

Interventions showcased a wide range of topics, teaching modalities, and length of instruction. Case-based modules, small group or open discussion, lectures, patient panels, standardized patient encounters, and scholarly projects were all used as teaching formats. Multiple interventions centered aspects of transgender care, such as gender-affirming hormone therapy, professionalism, cancer screening, pediatric considerations, and radiographic considerations.⁵¹⁻⁵⁷ Allyship modules that were included incorporated LGBTQ+ considerations.^{58,59} Didactic instruction

TABLE 2
LGBTQ+ Health Curricular Time and Topics Among Medical Specialties

Specialty	Study	Curricular Time	Curricular Topics	Trends
Dermatology	Hyde et al (2022) ³⁰ Jia et al (2020) ²⁶ Nowaskie et al (2022) ³⁸	- Residents receive a median of 1 hour of LGBTQ+ health content annually (median desired hours: 3-5). - An estimated 34-46% of programs report 0 hours of LGBTQ+ health content.	Key curricular topics: dermatologic manifestations of HIV and STIs, dermatologic concerns related to gender-affirming care, skin cancer risk, and history and physical examination considerations for LGBTQ+ patients.	
Emergency medicine	Moll et al (2014) ³⁶ Moll et al (2021) ²¹	75% of programs offer LGBTQ+ health content, with a median of 2 hours annually (range: 0-22 hours; median desired hours: 4). - In 2013, only 33% of programs reported any LGBTQ+ health teaching with an average of 45 minutes (range: 0-8 hours). 25% of programs report 0 hours of LGBTQ+ health content.	Not surveyed.	The American Board of Emergency Medicine created a model guideline of core competencies to include sexual and gender identity (2019) and gender-affirming and transgender care (2022).^{39,40}
Family medicine	Bunting et al (2022) ¹² Donovan et al (2021) ³⁵	- Approximately 70% of programs offer teaching on LGBTQ+ health. - Mean annual hours dedicated to LGBTQ+ health were 5.4-5.7 in didactic curricula and 11.8-16 for clinical instruction.	- Key curricular topics: general LGBTQ+ care considerations (eg, sexual history taking, pronoun use, LGBTQ+ health disparities), preventative care (eg, STI screening, HIV pre- and post-exposure prophylaxis, cancer screening), mental health (eg, depression and suicide, trauma), intimate partner violence, and gender-affirming care (eg, gender dysphoria, hormone therapy). - Low-frequency topics: reproductive health for LGBTQ+ persons, substance use, eating disorders, and surgical referrals for gender-affirming care.	
Internal medicine	Bunting et al (2022) ¹² Suarez et al (2022) ²⁸ Marr et al (2023) ⁴¹ McGarry et al (2008) ⁴²	61% and 70% of programs report LGBTQ+ health content in didactic and clinical curricula, respectively. - Mean annual hours dedicated to LGBTQ+ health were 5.4-5.7 in didactic curricula and 11.8-16 for clinical instruction.	- Key curricular topics: LGBTQ+ care considerations such as pronoun use, sexual history taking, and creating LGBTQ+ inclusive spaces; HIV-related care; LGBTQ+ geriatric considerations; depression and suicide; substance use; stigma and discrimination; and medical care of transgender and gender expansive identities. - Low-frequency topics: palliative and end-of-life considerations, reproductive health for LGBTQ+ persons, and specialty care referrals for transgender patients.	Content appraised in 2008 included only gay men or lesbian women, without acknowledgement of other LGBTQ+ identities.

TABLE 2

LGBTQ+ Health Curricular Time and Topics Among Medical Specialties (continued)

Specialty	Study	Curricular Time	Curricular Topics	Trends
Internal medicine-pediatrics	Bunting et al (2022) ¹²	67% and 44% of programs report LGBTQ+ health content in didactic and clinical curricula, respectively. - Mean annual hours dedicated to LGBTQ+ health were 5.4-5.7 in didactic curricula and 11.8-16 for clinical instruction.	Overall curricular patterns were comparable to family medicine, internal medicine, and pediatrics, apart from increased coverage of topics such as suicide, gender dysphoria, substance use, and reproductive health for LGBTQ+ persons.	
Pediatrics	Bunting et al (2022) ¹² Kelly and Langsang (1999) ⁴³	65% and 60% of programs report LGBTQ+ health content in didactic and clinical curricula, respectively. - Mean annual hours dedicated to LGBTQ+ health were 5.4-5.7 in didactic curricula and 11.8-16 for clinical instruction.	- Key curricular topics: terminology and pronouns, sexual history taking, LGBTQ+ health disparities, and HIV and STI screening, gender dysphoria, and mental health issues (eg, depression, suicide). - Low-frequency topics: substance use and eating disorders, as well as medical and surgical aspects of gender-affirming care.	Previously, a 1999 study identified that 54.5% of residency programs provided some education for only sexual minority youth.⁴³
Psychiatry	Hirschtritt et al (2019) ²⁷ Sansone and Wiederman (2000) ³⁷	Over half of programs report 5 or fewer hours of LGBTQ+ health content.	- Key curricular topics: sexual history taking, LGBTQ+ health disparities, mental health among transgender people, child and adolescent sexual development, and the history of psychiatry and homosexuality. - Low-frequency topics: racial and ethnic considerations and geriatric considerations.	A 2011 study surveyed limited content related to gay and lesbian patients and included transsexualism under gender disorders and transvestism under paraphilias, both of which are outdated and problematic characterizations.⁴⁴

Abbreviations: LGBTQ+, lesbian, gay, bisexual, transgender, queer, and other sexual and gender minority; STI, sexually transmitted infection.

ranged from 10 to 15 minutes in length to 2 hours, with some as isolated sessions and others as part of a longitudinal curriculum. Multiple interventions included clinical experience, such as clinical observer-ship, rotating through an LGBTQ+ or gender care clinic, or carrying a patient panel through a continuity clinic. Of the educational interventions that studied resident impact, the majority analyzed resident perspective, confidence, and awareness in caring for LGBTQ+ patients.^{15,51,53,57,59-62} Evaluation of LGBTQ+ specific knowledge acquisition was highly variable, ranging from perceived knowledge gain to objective quizzes, with few interventions using validated scales.^{51,56,58,61,63-65}

Discussion

This study provides a timely synthesis of LGBTQ+ health teaching across residency education. Specialty data have been scarce until recent years, with an increase from 4 specialties surveyed prior to 2015 to 12 in 2024. The literature from medical specialties appeared to be more robust, with more cross-sectional surveys, needs assessments, and educational interventions when compared to surgical specialties. Surgical specialties focused primarily on considerations of gender-affirming surgery, and those most involved with gender-affirming surgery (OB/GYN, otolaryngology, plastic surgery, urology) represented nearly all the

TABLE 3
LGBTQ+ Health Curricular Time and Topics Among Surgical Specialties

Specialty	Studies	Curricular Time	Curricular Topics	Trends
Obstetrics and gynecology	Burgart et al (2022) ²⁹ Guerrero-Hall et al (2021) ²² Vinekar et al (2019) ²³ Worly et al (2021) ⁴⁵	- Median annual hours of LGBTQ+ health teaching range from 1-5, with just under 1/3 of residents reporting 0 hours. 51% of programs offer transgender health content.	- Key curricular topics: sexual history taking, transgender patient care, cultural competency, and inclusive language. - Low-frequency topics: surgical techniques, patient counseling before gender-affirming surgery, gender-affirming surgery complications, hormone therapy, fertility preservation, contraception, and cancer screening.	- Since 2013, the Council on Resident Education in Obstetrics and Gynecology has recommended that residents receive education in transgender health.⁴⁶ - Transgender health education occurs primarily through didactics (97%), and most programs report fewer than one resident encounter with transgender patients per year.
Oral and maxillofacial surgery	Ludwig et al (2019) ³¹	31% of residents report exposure to transgender health in residency, with 18%, 17%, and 22% receiving teaching in psychiatric, medical, and surgical aspects of transgender care, respectively.	- Key curricular topics: facial surgery (eg, facial feminization or masculinization) - Low-frequency topics: gender-affirming surgical complications and vocal (pitch alteration) surgery.	Didactic instruction predominates for psychiatric and medical considerations, while surgical content is more frequently obtained through clinical exposure.
Otolaryngology	Goetz et al (2021) ²⁴ Massenburg et al (2018) ³²	1% of total didactic hours and 0.7% of total clinical hours are devoted to LGBTQ+ health, while 17% of residency programs include no LGBTQ+ health education. 30% of residents report exposure to transgender health in residency, with 16%, 15%, and 40% receiving teaching in psychiatric, medical, and surgical aspects of transgender care, respectively.	Key curricular topics: medical topics included HIV-related conditions, facial and voice changes related to hormone therapy, general LGBTQ+ care considerations, and head and neck cancers in LGBTQ+ patients; surgical topics included facial surgery (eg, facial feminization or masculinization), injectable fillers and neurotoxins, vocal surgery, and gender-affirming surgical complications.	Residents receive teaching via didactics or clinical exposure, but rarely both.
Plastic surgery	Magoon et al (2020) ⁴⁷ Morrison et al (2016) ³⁴ Morrison et al (2017) ⁴⁸	- A median of 2 annual hours each were dedicated to transgender health in didactic curricula (range: 0-15) and clinical instruction (range: 0-60). 87% of programs offer transgender health education in residency training. - Only 26% of programs have a dedicated gender-affirming care clinic experience for residents, which is associated with increased clinical exposure to gender-affirming surgery.	- Key curricular topics: top (chest) surgery. - Low-frequency topics: bottom (genital) surgery, facial surgery, and gender-affirming surgical complications.	Surgical aspects of transgender care are most frequently covered, followed by psychiatric and medical aspects, respectively.

TABLE 3

LGBTQ+ Health Curricular Time and Topics Among Surgical Specialties (continued)

Specialty	Studies	Curricular Time	Curricular Topics	Trends
Urology	Dy et al (2016) ³³ Morrison et al (2017) ⁴⁸	54% of urology residents report exposure to transgender health, with a median of 1 hour of didactic education and 2 hours of clinical exposure annually.	- Key curricular topics: bottom surgery and gender-affirming surgical complications. - Low-frequency topics: psychiatric or medical (eg, hormone therapy) aspects of transgender care.	Most content exposure is clinical.

Abbreviations: LGBTQ+, lesbian, gay, bisexual, transgender, queer, and other sexual and gender minority; STI, sexually transmitted infection.

surgical literature. While attention to LGBTQ+ health, especially transgender care, has increased, substantial gaps remain in understanding LGBTQ+ health teaching in GME, and current efforts appear voluntary and siloed.

Many have called upon the ACGME to clarify and include specific LGBTQ+ health considerations across residency competencies.^{10,12,14,27-30,48-50,59,66,67} This is especially important due to an unprecedented rise in anti-LGBTQ+ discourse and legislation across the US. Federal and state bills censoring LGBTQ+ content in education, banning gender-affirming care, and stripping the protections of LGBTQ+ people pose threats to patients, trainees, and educators in medicine, especially in the Midwest and South, where the majority of these bills are concentrated.⁶⁸ Geographic disparities in LGBTQ+ health education and patient care may widen, should educators become reluctant to teach LGBTQ+ topics in states that restrict LGBTQ+ rights, and if LGBTQ+ patients become more reticent to disclose their identities. It is imperative to protect access to care and ensure clinicians are well-trained in caring for LGBTQ+ patients.

Program directors generally recognize the importance of LGBTQ+ health education and express a desire to incorporate it into residency curricula.^{12,23-26,48} However, some still perceive LGBTQ+ considerations as not relevant or important across all specialties or even all learners within a specialty.^{12,21,22,26} In addition to perceived irrelevance, the often-cited barriers of limited curricular time and lack of expert faculty necessitate a paradigm shift from one-time interventions addressing allyship, attitudes, or basic LGBTQ+ considerations to one that also integrates specialty-specific knowledge and procedural skills across postgraduate years.^{10,14} Ensuring residency curricula are LGBTQ+ inclusive even when covering topics not specific to gender or sexual identity is an effective strategy without demanding additional curricular time. Online and asynchronous material can be feasible, acceptable, and high-yield, even if required.²⁴⁻²⁶ The creation of optional modules,

electives, and longitudinal pathways or areas-of-distinction can serve as a fruitful way to further engage trainees. Encouraging the use of centralized resources developed by or in conjunction with LGBTQ+ national health organizations, specialty or board certification organizations, or the ACGME may lower barriers to accessing and administering LGBTQ+ health content across specialties, while encouraging universal adoption within a specialty.^{12,26} Future research should aim to build consensus on content to be covered during residency training and begin to establish best practices. This work can be guided by frameworks such as the Health Equity Implementation Framework, which has been proposed as a tool for incorporating equity principles into innovative education strategies, while exposing barriers such as lack of resources, lack of expertise, and time constraints.^{69,70} Additionally, medical educators should consider perceived versus actual knowledge on LGBTQ+ health topics in this process, recognizing that evaluation of resident skills in LGBTQ+ health is highly variable and unstandardized.

While clinical observerships, rotations, and patient care activities in LGBTQ+ health have become more abundant across specialties, program directors and residents continue to note the need for more clinical exposure to supplement didactic training.²⁹ As evidenced by recent individual educational interventions, diversifying case-based learning, simulation, or direct clinical care by incorporating LGBTQ+ patients—even those without LGBTQ+ specific presenting issues—can be an effective way to expose residents to LGBTQ+ health concepts in all specialties.^{53,56,60,61,64,67,71}

Our study has several limitations. This scoping review allowed for a broad inclusion of studies to frame a current state, but limited critical appraisal of the literature. Many of the studies had low response rates and were vulnerable to recall bias. We may have overlooked specialties engaging in LGBTQ+ health teaching if they did not report on the scope of LGBTQ+ health education, or if specific interventions were unpublished. A review of educational assessment

strategies and effectiveness of LGBTQ+ health training was out of scope for this study, with emerging work on this area elsewhere.^{8,72} Surveying hours of education represents a limited approach, as instructional hours may not correlate with competency, quality, or breadth of education.^{5,11} Finally, it is important to consider the diversity of LGBTQ+ communities, as there are key limitations when providing education about this population as a single group. Studies on LGBTQ+ health may also be challenging due to the risks, bias, and politicization of health care for members of the community.

Despite these limitations, our findings highlight the need to increase LGBTQ+ health education in GME and provide practical next steps in exploring topics and teaching modalities that will be effective across and within specialties.

Conclusions

Over the past decade, there has been increased attention to LGBTQ+ health in residency education, but considerable variability persists in the scope and amount of teaching. Common barriers include regional disparities, limited curricular time, and lack of faculty expertise in LGBTQ+ health, though centralized resources with specialty-specific guidance may address these challenges.

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Funding: The authors report no external funding source for this study.

Conflict of interest: The authors declare they have no competing interests.

This work was previously presented as an abstract at the Accreditation Council for Graduate Medical Education Annual Educational Conference, February 20-22, 2025, Nashville, Tennessee, USA.

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Received August 22, 2024; revisions received December 12, 2024, and March 31, 2025; accepted March 31, 2025.