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A Novel Curriculum Assessment Tool, Based on AAMC Competencies, to Improve Medical Education About Sexual and Gender Minority Populations

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Abstract

Problem
Medical education aspires to mitigate bias in future professionals by providing robust curricula that include perspectives of and practices for caring for sexual and gender minority (SGM) populations; however, implementation of these ideals remains challenging. Medical school leaders motivated to improve curricula on caring for SGM populations must survey their school’s current curricula to identify strengths and opportunities for improvement. In 2014, the Association of American Medical Colleges (AAMC) published 30 SGM competencies that curricula should address. Here the authors describe the development of a tool to efficiently assess whether an undergraduate medical education (UME) curriculum adequately incorporates the AAMC recommended SGM competencies.

Approach
In 2018, Boston University School of Medicine (BUSM) convened a group of faculty and students with experience and expertise regarding SGM health. The group distilled the 30 AAMC competencies into 12 SGM topic areas that should be addressed in any UME curriculum, and they developed a curriculum assessment tool to evaluate the presence and timing of these topic areas in the BUSM curriculum. This tool was distributed to all course and clerkship directors responsible for the required UME curriculum at BUSM to investigate where these topic areas are addressed (May-June 2019).

Outcomes
The curriculum assessment tool identified several strengths in the preclerkship and clerkship curricula, including faculty willingness and enthusiasm to include SGM content. The assessment
tool also revealed that some SGM topic areas are underrepresented in the BUSM curriculum, particularly during clerkships.

Next Steps

The curriculum assessment tool described here is a straightforward, standardized instrument to map SGM topic areas within any UME curriculum. It is designed to be comprehensible by individuals who are not familiar with SGM health. The tool minimizes barriers to medical curricular change by providing a mechanism to assess and understand how SGM health is incorporated into existing curricula.
Problem

Medical educators are increasingly aware of the need to mitigate bias in health care through the provision of curricula that include the perspectives and needs of diverse populations; yet, one of the most prominent reasons for continued health inequities among sexual and gender minority (SGM) populations is the lack of health care providers who are aware of and able to address the unique considerations necessary for caring for these populations. SGM refers to people whose sexual orientation and/or gender identity is outside the scope of cisgender heterosexuality. Members of these populations have traditionally been referred to as lesbian, bisexual, gay, transgender, and queer (LGBTQ); however, this terminology excludes some manifestations of sexual and/or gender diversity. Boston University School of Medicine (BUSM) uses the more inclusive phrase “gender and sexual diversity” in work addressing SGM health and well-being. Medical schools vary in how they cover SGM content and to what extent graduating students feel prepared to meet the needs of these populations.\textsuperscript{1,2} To provide medical schools with a more systematic, uniform approach to teaching SGM content in undergraduate medical education (UME), the Association of American Medical Colleges (AAMC) published a resource guide in 2014 entitled “Implementing Curricular and institutional Climate Changes to Improve Healthcare for Individuals Who Are LGBT, Gender Nonconforming, or Born with DSD.”\textsuperscript{3} These guidelines, which include 30 competencies in 8 competency domains, have been used to inform curriculum development, including the assessment of an institution's current SGM curriculum.\textsuperscript{4,5}

To assess and reform the SGM curriculum at BUSM, a vertical integration group (VIG) was formed in 2018. The group worked to identify existing strengths as well as opportunities for addressing SGM topics. While the AAMC’s resource for medical educators outlines \textit{which} competencies should be covered in UME, it does not provide a roadmap for \textit{how} an institution
should assess and subsequently modify its curriculum. Furthermore, while the resource includes a comprehensive compendium of suggested SGM competencies, it does not outline recommendations about where, when, or how to incorporate these into a curriculum. Therefore, the VIG used the AAMC resource to create a curriculum assessment tool to provide UME institutions with a standard, systematic way of approaching curriculum assessment. The goal was to enable institutions to use the assessment tool and their findings to devise recommendations for improving their SGM content.

**Approach**

**Formation and composition of the Gender and Sexual Diversity VIG**

Formation of the Gender and Sexual Diversity (GSD) VIG (Figure 1) was approved by the Medical Education Committee at BUSM in the fall of 2018. Faculty members were recruited based on professional interests and expertise in SGM health and health care; student members were recruited based on expressed interest and previous advocacy in the field of SGM health. The GSD VIG comprised 14 people: eight faculty members and six students. Five of the faculty members were involved in either the core preclerkship or clerkship curriculum. The student members collectively represented each of the graduating classes of 2019 through 2022.

**Phase 1: Initial curriculum assessment**

The VIG began its initial assessment of SGM content within the curriculum by reviewing the AAMC recommendations. The VIG then attempted to determine whether the 30 AAMC SGM competencies were present in the curriculum by examining the learning objectives of courses and the notes and recordings of individual lectures. In addition, the group distributed an exploratory survey to BUSM students to better understand their perceptions of SGM content in the
This informal survey did not comprehensively sample all students, but it was useful for identifying obvious strengths and gaps.

This early investigation revealed not only gaps in coverage of key SGM content but also students’ concerns about the quality and depth of existing content. The initial assessment indicated that faculty members’ perceptions about what content is delivered differ from students’ perceptions, suggesting the need for careful evaluation of the curriculum from the perspective of both of these stakeholder groups. Further, this initial phase proved to be labor intensive, and the VIG recognized the need for a more efficient mechanism to review large volumes of curricular material for inclusion of SGM content. The present work details the first step in that process: the development of a tool allowing for the comprehensive and efficient evaluation of faculty members’ perspectives of inclusion of SGM content in a curriculum.

**Phase 2: Development of a tool, based on AAMC competencies, to evaluate SGM curricular content**

To simplify efforts, the VIG developed an assessment tool to collect faculty members’ self-reported inclusion of SGM content in the curriculum. Using the 2014 AAMC resource for educators and list of 30 SGM competencies, the VIG created a condensed and assessable list of skills, behaviors, and knowledge specific to SGM care. VIG faculty members with expertise in caring for SGM populations identified and prioritized topics that should be addressed to better prepare students to care for SGM populations. This process resulted in a list of 12 SGM topic areas. The VIG developed questions to assess whether these topic areas are addressed within the curriculum—and, if they are, how and where. This systematic approach to translating the AAMC report into targeted curriculum assessment questions ensured that each AAMC competency domain and SGM topic area was represented in the final assessment tool (Chart 1). In addition,
VIG designed the language in the tool to include readily recognizable topic areas to assist faculty who do not have a familiarity with SGM health and health care. This work produced a curriculum assessment tool that easily solicits and standardizes faculty input on what SGM topic areas they teach in their curricula, in a format that is adaptable to any UME curriculum.

The SGM Curriculum Assessment Tool (SGM-CAT) collected data from faculty who oversee preclerkship courses or clerkships. Faculty respondents were asked to provide not only basic course and clerkship data (e.g., during which medical school [MS] year the course or clerkship occurs) but also information on whether specific topic areas distilled from the 30 AAMC SGM competencies were present in their curriculum. Response options were as follows: “All students/mandatory,” “Some students/depends on location,” or “No.” Respondents were given the opportunity to elaborate on why SGM topic areas were or were not covered, and they were asked to share anything about their curriculum that addresses SGM populations not otherwise addressed in the tool (See Supplemental Digital Appendix 1 at http://links.lww.com/ACADMED/B132).

The SGM-CAT was distributed to the directors of all required courses and clerkships in all four years of the curriculum, as well as to directors of electives taken by the majority of students. It was distributed using Qualtrics (Qualtrics XM, Provo, Utah) from May to June 2019. Responses were assumed to be an accurate reflection of the state of the SGM curriculum at BUSM during the 2018-2019 academic year. This investigation was deemed exempt by the Boston University Medical Campus Institutional Review Board.
Outcomes

SGM-CAT results

Complete results of the SGM-CAT at BUSM are detailed in Supplemental Digital Appendix 2 at http://links.lww.com/ACADMED/B133. The majority of course directors (28/38; 73.7%) responded to the SGM-CAT, although the response rate for MS2 course directors was lower (5/15; 33.3%). Our survey revealed that just under half of the course directors reported including any SGM content in their curriculum (12/28; 43%). Notably, certain courses did contain some of the 12 topic areas identified, despite their faculty leaders not initially perceiving that the topics were SGM related.

The SGM-CAT demonstrated that all 12 SGM topic areas were covered at some point in the required curriculum; however, some topics were addressed only once or twice, and SGM content was overrepresented in the preclerkship years relative to the clerkship years (Supplemental Digital Appendix 2, http://links.lww.com/ACADMED/B133). Even though SGM content was present in clerkship curricula, the material was rarely delivered to all students, and the director of only one of the seven clerkships (Family Medicine) reported more than one mandatory learning objective related to SGM content. More often, exposure to SGM content in the clerkship years was nonexistent or site- or preceptor-dependent. Overall, the results revealed a variable distribution of SGM teaching across the four years of UME at BUSM, with some courses and clerkships emphasizing SGM content more than others.

Phase 3: Analysis of results and recommendations for curriculum reform

The SGM-CAT provided quantitative, longitudinal evidence of the distribution of SGM instruction at BUSM, allowing the VIG to offer clear curricular recommendations. The VIG readily identified strengths of the curriculum, including a general willingness and enthusiasm by
faculty to include SGM content. Another strength was that certain individual faculty and curricular sessions provided excellent and appropriate content.

The SGM-CAT also exposed gaps in the curriculum. Some existed because faculty leaders lacked awareness of how SGM content fit within their courses. For example, the Essentials of Public Health course did not cover the disproportionately high rates of mental distress or underutilization of cancer screening services among SGM populations—even though this course would be an appropriate home for these population-based themes. Further, material on HIV prevention and on behavior-based sexually transmitted infection screening was missing from the preclerkship infectious disease course where it might naturally fit. The tool also revealed more systematic gaps in the curriculum, such as failure of clerkships to fully or appropriately reinforce SGM content taught in preclerkship courses. A key conclusion we gleaned from the findings is that the curriculum suffered from a lack of intentional, guided inclusion of SGM health and health care content and would benefit from deliberate, collaborative attention to longitudinal inclusion of core SGM content.6,7 VIG members used the information from the SGM-CAT to develop specific recommendations to share with the administration to improve education and training on SGM health. These recommendations ranged from quite specific (e.g., add HIV prevention to the infectious disease and public health curricula) to much broader (e.g., develop an intentional strategy for addressing SGM health content in the curriculum). The VIG presented these recommendations to the Medical Education Committee at BUSM in January 2020. The committee expressed understanding of the implications of the identified gaps and of the utility and value of pursuing curriculum and faculty development in these areas. Modifications in the curriculum based on these findings are currently being implemented.
Next Steps

The SGM-CAT described here is a user-friendly tool to capture course directors’ perspectives of what, where, and how essential SGM content is included in UME. Applying the SGM-CAT at BUSM demonstrated that the tool is useful for efficiently and systematically investigating SGM content in a four-year UME curriculum. It builds upon previous literature to allow both a granular assessment of SGM topic area inclusion and a broad evaluation of a complete UME curriculum spanning both preclerkship and clerkship years. Notably, the SGM-CAT serves only to ascertain the presence or absence of SGM content and its distribution throughout the curriculum. After deploying the SGM-CAT, further investigation of the quality of existing curricular components is necessary. While developed and assessed at a single institution, the SGM-CAT is easily generalizable to other institutions. The SGM-CAT may be used by any institution interested in quickly assessing the inclusion and distribution of SGM content in its UME curriculum, which can, in turn, inform recommendations for content improvement and faculty development.

The BUSM faculty have indicated that the SGM-CAT is relatively easy to understand, but internal reliability and validity of responses have not been formally assessed. Further, while an initial exploratory student survey contributed to the development phase of the SGM-CAT, student perceptions of the inclusion of SGM content in their learning experience have not yet been systematically assessed. Faculty perception of curriculum may differ from students’ perception in significant and meaningful ways. Therefore, important next steps in our work are to examine the reliability and validity of this tool and to conduct a comprehensive evaluation of students’ perspectives and feedback regarding the same SGM topic areas evaluated by the SGM-CAT. Further, to truly measure the success of our targeted curriculum recommendations and
changes, it will be necessary to conduct objective measures of student competence in future initiatives (e.g., how students perform on SGM-related content in objective structured clinical examinations).

Curricular change is a lengthy and complex process.\textsuperscript{10} The SGM-CAT, with minor modifications to match local curricular structure, can allow curriculum committees to efficiently and systematically review any UME institution’s entire SGM curriculum in order to identify areas of relative strength and opportunities for improvement. These results can then be used to appropriately focus efforts on needed curricular and faculty development, and to objectively document changes to curricula over time. For example, at our institution the VIG intends to deploy the SGM-CAT at regular intervals to assess the outcomes of the recommendations made to the Medical Education Committee in order to examine the progress of curriculum reform. The SGM-CAT will allow us to ensure that the UME curriculum at our institution continues to evolve to meet the needs of SGM patients and the practitioners who treat them.
References


Figure Legend

Figure 1

SGM Curriculum Assessment Tool (SGM-CAT) implementation process. The tool was distributed from May to June 2019, so the results reflect the state of the BUSM SGM curriculum during the 2018-2019 academic year. The VIG’s recommendations were presented to the BUSM curricular governing body in January 2020 and the recommendations are currently being implemented. Abbreviations: SGM, sexual and gender minority; CAT, curriculum assessment tool; VIG, vertical integration group; BUSM, Boston University School of Medicine.
Figure 1

Phase 1

VIG Formation
Fall 2018

Recruitment of faculty and students to the VIG; development of VIG missions and goals

Initial assessment of curricular materials; informal student survey

Phase 2

SGM-CAT Development and Distribution
Spring 2019

Development and refinement of SGM-CAT by VIG members

Distribution of SGM-CAT to course and clerkship directors

Phase 3

Analysis and Recommendations
Summer/Fall 2019

Analysis of survey responses; follow-up interviews conducted as needed; strengths and weaknesses identified

Recommendations for curricular modifications developed and presented to curriculum oversight committee
## Chart 1

AAMC Core Competency Domains Contained in Each of the 12 Core SGM-Related Topics Presented on the Curriculum Assessment Tool

<table>
<thead>
<tr>
<th>SGM-specific topic area assessed</th>
<th>AAMC competency domains</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Patient care</td>
</tr>
<tr>
<td>Terminology and language use</td>
<td>✓</td>
</tr>
<tr>
<td>Healthcare trust and discrimination</td>
<td>✓</td>
</tr>
<tr>
<td>Legal, ethical, &amp; health policy issues</td>
<td>✓</td>
</tr>
<tr>
<td>Health and healthcare disparities &amp; inequities</td>
<td>✓</td>
</tr>
<tr>
<td>Development of gender &amp; sexual identity across lifespan</td>
<td>✓</td>
</tr>
<tr>
<td>Mental health</td>
<td>✓</td>
</tr>
<tr>
<td>Cancer screening</td>
<td>✓</td>
</tr>
<tr>
<td>STI screening and prevention</td>
<td>✓</td>
</tr>
<tr>
<td>HIV prevention</td>
<td>✓</td>
</tr>
<tr>
<td>Comprehensive sexual history</td>
<td>✓</td>
</tr>
<tr>
<td>Contraception, family planning, and fertility</td>
<td>✓</td>
</tr>
<tr>
<td>Gender-affirming care</td>
<td>✓</td>
</tr>
</tbody>
</table>

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Abbreviations: AAMC, Association of American Medical Colleges; SGM, sexual and gender minority; STI, sexually transmitted infection.

*In May and June 2019, a group of 14 faculty members and medical students from Boston University School of Medicine identified and prioritized topic areas (rows) that should be addressed to better prepare students to care for SGM populations. Then, they developed a curriculum assessment tool (Supplemental Digital Appendix 1) to survey course and clerkship directors about which of the topics were covered in the undergraduate medical education curriculum.