Original Publication

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HIV: A Socioecological Case Study

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Citation: Sell J, George D, Levine MP. HIV: a socioecological case study. *MedEdPORTAL*. 2016;12:10509. https://doi.org/10.15766/mep_2374-8265.10509

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Abstract

Introduction: New strategies are needed to lower health care costs and address the health care needs of communities, especially for marginalized persons and subpopulations. Improved education in health systems, which encompasses population, community, preventive, and public health, is one way to better train the future physician workforce to meet national and local health care needs. This resource was created as part of an 18-month science of health systems and navigation curriculum. **Methods:** The purpose of this resource is to use the socioecological model lens to analyze health disparities for marginalized persons and subpopulations. A medically and socially complex patient with HIV is presented as the initial case study that leads to identification of barriers and needs on individual, community, and public policy levels. This is an active-learning resource that includes both small- and large-group discussion driven by self-directed learners using the provided resources. **Results:** This resource was successfully implemented as a required session for 150 medical students beginning the second year of medical school. A cohort of 21 students randomly selected to complete a standard online course evaluation for the session, rated their agreement (1 = *strong disagreement*, 5 = *strong agreement*) to the statement “Rate the extent to which the lecture supported your mastery of the learning objectives,” as 4.4, on average. **Discussion:** This curriculum has been implemented and evaluated for medical students, but it is broadly applicable to residents and interprofessional students in health-related fields. It is designed to give learners a practical medical context for the application of principles that may be taught within a health systems or population health course.

Keywords

Healthcare Disparities, LGBT, Population Health, HIV, Delivery of Health Care, Public Health, Health Care Systems, Socioecological Model, Sexual Minorities

Educational Objectives

By the end of the session, learners will be able to:

1. Apply the socioecological model to persons with HIV/AIDS.
2. Analyze causes of health disparities for marginalized patient populations (e.g., LGBT persons).
3. Identify approaches at the clinical, community, and policy levels that clinicians can use to help care and advocate for their patients.

Introduction

In the Institute of Medicine’s 2012 report on primary care and public health, the committee specifically recognized the need “to develop the workforce needed to support the integration of primary care and public health”¹ through “curriculum development and clinical experiences that favor the integration of primary care and public health.”¹ This call for integration is based on several factors, including (1) the unsustainability of our current health care delivery model, (2) the impact of social and environmental determinants of health, (3) the accessibility of population-based data available to guide interventions, and (4) the importance of primary prevention to improve health outcomes and lower costs. New strategies are needed to lower health care costs and address the health care needs of communities, especially for marginalized persons and subpopulations. Improved education in health systems, which encompasses population, community, preventive, and public health, is one way to better train the future physician workforce to meet national and local health care needs.

Appendices

- A. SE Case Presession Overview.docx
- B. SE Case Small-Group Facilitator’s Guide.docx
- C. SE Case Small-Group Student Guide.docx
- D. SE Case Presentation.pptx

All appendices are peer reviewed as integral parts of the Original Publication.

This resource was created as part of an 18-month science of health systems and navigation curriculum (SyNC) for medical students during their first 2 years of medical school. In addition to undergoing didactic learning with regard to public and population health and the socioecological model, students in the course concurrently visit several regional clinics to participate in patient navigation, which is an experience that informs classroom discussions. Opportunities such as these that bridge didactic and clinical-experiential learning were developed in response to repeated requests for applying these teaching principles during just-in-time feedback sessions.

Students engage with this case during the socioecological medicine module (the fifth of seven modules) at our institution; the case can be easily incorporated into other courses that teach principles of population health, public health, community health, or health systems for a variety of learners. The goal is to apply basic health systems concepts in a real-world setting and highlight the role of physicians in addressing complex health care needs using a systems approach (nursing and public health students could also find this resource useful).

This resource adds to the field of health disparity education by using a case-based approach to analyze a medically complex patient with poor health outcomes and encouraging students to identify multilevel solutions to achieve health equity through a discussion of current health disparities for LGBT individuals, racial minorities, and those affected by HIV. Through this process, learners determine preventative strategies to improve health. There are a growing number of MedEdPORTAL resources that look at health disparities from the lens of cultural competency,² communication,³⁻⁵ and medical ethics,⁶ utilizing didactic,⁷ standardized patient,^{3,4} and team-based^{6,8} teaching styles. This resource looks at health disparities within the context of the HIV epidemic in the United States with an emphasis on the socioecological model.

Using the lens of the socioecological model, students are able to analyze health disparities for marginalized persons and subpopulations. The socioecological model is

an ecological model for health promotion which focuses attention on both individual and social environmental factors as targets for health promotion HIV interventions. It addresses the importance of interventions directed at changing interpersonal, organizational, community, and public policy, factors which support and maintain unhealthy behaviors.⁹

A medically and socially complex patient with HIV is presented as the initial case study that leads to gradual identification of barriers and needs on individual, community, and public policy levels. Background knowledge of HIV for students and facilitators is not required for the session, although the PowerPoint presentation may best be led by someone with experience in caring for patients with HIV. Students are encouraged to move beyond the basic medical aspects of care and to incorporate their experience and knowledge of health systems to identify barriers to health equality and optimal care. During the session, students are actively prompted to propose questions and seek answers in small groups and teams.

Methods

Lecture-based courses are under increasing scrutiny as medical pedagogy transitions to a greater focus on learning approaches that are more active, such as case-, problem-, and team-based learning.¹⁰ These emerging modalities enable students to progress beyond acquiring factual knowledge and achieve a depth of understanding through solving complex problems amongst peers as part of a team or group. Whereas learners in lecture-based modes of instruction tend to be motivated to attend class and study lecture notes in order to acquire information, active learning guides students to access this information outside of class and incentivizes their active participation in applied group discussions. These approaches are putting systemic pressure on lecture-based courses—long the hallmark of medical education—to better integrate active learning.

In a course teaching health systems science to 150 second-year medical students, we have found it most effective to anchor student learning in real-world cases that evoke core learning content (e.g., social determinants of health, barriers to health, epidemiology, etc.). In addition to empowering students to explore complex systems-level issues with their peers in an open-ended fashion, such approaches also invite students to apply and synthesize the experiences they have as patient navigators working with underserved patients in the area.

In advance of the 2-hour session, learners ($N = 150$) are provided with the presession overview (Appendix A) so that they can prepare and begin to think about issues that will be discussed in the case.

During the first hour of the session, learners are divided into small groups of approximately six to 12 students, with one facilitator for each small group. Approximately 14 small-group rooms are needed for this activity, and each group requires printed materials but no electronic equipment. The time line for the 1-hour small-group activity is as follows:

- Check-in (5 minutes).
- Case study (50 minutes).
 - Hand out pages 1 and 2 to the group (10 minutes).
 - Hand out page 3 to the group (10 minutes).
 - Hand out page 4 to the group (15 minutes).
 - Hand out page 5 to the group (15 minutes).
- Checkout (5 minutes).

For the activity, each facilitator should have the small-group facilitator's guide (Appendix B) with key points for guiding the discussion. Facilitators need not be content experts, since key learning points are provided, but should be skilled at fostering conversation and group dynamics and at using the Socratic method to spark critical thought in students. Therefore, facilitators can be chosen from a variety of disciplines based solely on interest in facilitating group discussion and the presence of solid facilitation skills. At our institution, facilitators have included physicians, nurses, and administrators, all of whom have had varied expertise and interest in teaching students about health systems. Facilitators may use answers in the small-group facilitator's guide to help students answer the questions as a group. It is important that the facilitator not read the answers verbatim as they are provided as a guide to keep the group discussion on task and to make sure students are examining the case at acceptable levels of complexity. The facilitator should hand out individual pages from the small-group student guide (Appendix C) to the small groups at the appropriate time intervals. It is important to designate a timekeeper to limit each activity to its suggested time.

During the second hour of the session, learners join together in a lecture hall for the PowerPoint presentation (Appendix D). Approximately 5 minutes is allocated for student travel time between small-group rooms and the lecture hall. Small groups should sit next to each other so that they can collectively respond to questions during the large-group presentation. Ideally, the leader of the large-group session would have some background expertise in the national HIV epidemic and/or public health. The large-group session focuses on broader themes initially identified in the small-group case presentation. The PowerPoint presentation is divided into four sections: (1) HIV in the US, (2) HIV Detection, (3) Engagement in Care, and (4) HIV Prevention.

Three breaks for small-group discussion are included in the presentation. These are opportunities for each small group to reflect on the issues and actively develop solutions to the problems presented. Students may use their computers to research information. There are many answers to these broad questions that may vary regionally. The leader has the choice of assigning different prompting questions to different small groups. After 5-10 minutes of discussion, the small groups should then report their findings to the larger group. The time line for the large-group sessions is as follows:

- HIV in the US + HIV Detection (10 minutes).
 - Small-group discussion—Slide 16 (10 minutes).
- Engagement in Care (5 minutes).
 - Small-group discussion—Slide 28 (10 minutes).
- HIV Prevention (5 minutes).
 - Small-group discussion—Slide 42 (10 minutes).
- Conclusion (5-10 minutes).

Results

This resource was successfully implemented as a required session for 150 medical students beginning the second year of medical school as part of their SyNC course. Facilitators were able to provide feedback on the activities in an open-ended reflection meeting held by course directors after each session. The facilitators noted that providing background information for the small-group session allowed for rich student-led discussion that did not require facilitators to have expertise in HIV, which enabled facilitators instead to focus on highlighting the realistic challenges in medical care that may benefit from a systems-based approach to improve care.

A cohort of 21 students selected randomly by the Office of Medical Education completed standard online course evaluations for the session, rating their agreement using a 5-point Likert scale (1 = *strong disagreement*, 5 = *strong agreement*) and providing open-ended comments about the session. Student mean ratings are as follows:

- Rate the extent to which the lecture supported your mastery of the learning objectives: $M = 4.4$.
- Rate the learning resource: $M = 4.1$.
- Rate your perceptions of the lecture overall: $M = 4.3$.

Students' open-ended comments included the following statements:

- "Lecture was very well structured and provided both clinical and systems based learning with time for discussion in groups. Really well put-together."
- "This was one of the best SyNC sessions we have had by far. There was good integration of the case from the first hour and the lecture had solid information as well as practical considerations for future physicians."
- "It was definitely one of the most engaging and directly applicable sessions we have had. I appreciated the mix of lecture and group activities because it helped keep people engaged and thinking about realistic aspects of care that are not covered in our other courses."

Discussion

This resource was a pleasure to create and execute, since it engaged learners in using their creativity and knowledge to critically apply a health systems approach to address current medical needs in the region and nationally. During the session, emphasis was placed not on content delivery but on raising questions, highlighting barriers to care, and allowing learners to formulate plans to improve care. These are skills that are necessary for addressing the current and future health care needs of the nation. Student feedback suggests that the session was well structured, conveyed useful/realistic information, and effectively balanced lecture-based and active-learning approaches.

The case was chosen to highlight a patient with complex medical and social issues and challenge learners, who might not have HIV-specific medical knowledge, to identify gaps in care and potential solutions within the socioecological model. Starting with a realistic patient case introduces issues that are then broadened to larger populations. Strengths of this approach include the ability to connect real-world scenarios with more abstract health systems concepts in a way that challenges learners to integrate

knowledge from different disciplines. Students' feedback demonstrates that they appreciated the realistic case and the balance of small- and large-group activities.

On the other hand, a significant limitation of the session is the broad nature of the topics discussed in only 2 hours. Learners who have little experience in being presented with new information that requires on-the-spot discussion may have more difficulty with the small-group sessions. Many topics, such as LGBT health disparities, touched on during the session could be developed in much greater detail. The session is intended for learners who have some background in health systems education in order to enable them to apply their clinical experience to core principles in health systems. Although it has not been designed for learners with a strong foundation in HIV knowledge, some learners or facilitators without experience or in-depth knowledge of HIV care may have more difficulty during the discussions. Based on facilitator and student feedback, the PowerPoint presentation has been revised to be more concise with regard to the information presented, as well as to allow more time for student discussion.

Because of the variety of topics touched on during the session, there is potential for variable learning, particularly during the small-group sessions. The key points provided in the facilitator's guide and the information presented in the large-group session are intended to reduce learner variability. Having a large-group presenter who is familiar with the information being presented and small-group facilitators who can make sure all the key points are touched on during the session can also help reduce variability.

This session was originally designed for medical students in their second year of medical school, but with additional effort and design, it can likely be adapted for a variety of other learners. It has already been condensed and redesigned for an hour-long teaching session with 15 family medicine residents. That version included a deeper focus on some of the medical aspects while still retaining the emphasis on identifying gaps in care and addressing solutions through a socioecological lens. Further adaptations could be considered for learners within other residency disciplines, as well as social work, public health, or nursing education.

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Disclosures

None to report.

Funding/Support

None to report.

Ethical Approval

Reported as not applicable.

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Received: April 25, 2016 | **Accepted:** November 22, 2016 | **Published:** December 2, 2016