

Original Publication

OPEN ACCESS

Social Determinants of Health Curriculum Integrated Into a Core Emergency Medicine Clerkship

Shannon E. Moffett, MD*, Hosseinali Shahidi, MD, MPH, Harsh Sule, MD, MPP, Sangeeta Lamba, MD, MS-HPed

*Corresponding author: smoffett@stanfordalumni.org

Citation: Moffett SE, Shahidi H, Sule H, Lamba S. Social determinants of health curriculum integrated into a core emergency medicine clerkship. *MedEdPORTAL*. 2019;15:10789. https://doi.org/10.15766/mep_2374-8265.10789

Copyright: © 2019 Moffett et al. This is an open-access publication distributed under the terms of the Creative Commons Attribution-NonCommercial-Share Alike license.

Abstract

Introduction: Demand that health centers address health inequities has led medical schools to emphasize social determinants of health (SDH). The Emergency Department often serves as first (or sole) point of health care access, making it an ideal environment in which to identify/explore SDH. Yet there are few SDH curricula targeting core emergency medicine (EM) clerkships. We describe implementation and outcomes of a three-part SDH curriculum instituted in a 4-week EM clerkship. **Methods:** We created a longitudinal curriculum aimed at fourth-year medical students in their EM clerkship. Students interviewed patients to discuss social and other influences on their health care and wrote reflections. After this, they discussed their individual cases in small groups, selected one patient, and found literature and strategies/systems to fit the patient's needs. Finally, groups presented their work to student-peers and faculty for discussion. Students were assessed for each activity and surveyed for impact of the curriculum. **Results:** We evaluated the curriculum, with preliminary data showing a wide range of topics covered. On a 5-point scale (1 = *Hardly at All*, 5 = *To a Very High Degree*), students responded with means of 4.4 to "I am able to recognize barriers to health that patients and families face from diverse socio-economic backgrounds" and 4.6 to "I feel it is important to recognize and address the social determinants of health as part of whole patient care." **Discussion:** This curriculum introduces SDH, uses metacognitive skills across multiple domains, and is feasible and has been well received in an EM clerkship.

Keywords

Social Determinants of Health, SDH, Social Emergency Medicine, Social EM, Community Emergency Medicine, Mandatory Emergency Medicine Clerkship

Appendices

- A. SDH in Emergency Medicine Student Guide .docx
- B. SDH Written Reflection Questions.docx
- C. SDH Written Reflection Assessment Rubric.docx
- D. SDH Oral Team Presentation Assessment Form.docx
- E. SDH Student Evaluation Survey.xlsx
- F. SDH Oral Team Presentation Sample.pdf

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

Educational Objectives

By the end of this resource, students will be able to:

1. Screen patients for social determinants and risk factors that affect their health.
2. Recognize the barriers to health facing patients/families from diverse socioeconomic backgrounds.
3. Apply knowledge of social determinants and risk factors to determine what would be appropriate referrals to social/community resources.
4. Collaborate with colleagues as a team to discuss effects of social and chronic health issues and formulate a plan of action to mitigate effects of social determinants of health.
5. Self-reflect on their experiences and lessons learned.

Introduction

Social determinants of health (SDH) include the social, economic, political, environmental, and cultural systems and structures that shape the conditions of a person's daily life.¹ As part of the AMA Accelerating Change in Medical Education Consortium's third pillar of medical education, health systems science, SDH are recognized as critical to medical student education.² Demand that health centers address health inequities has led medical schools to emphasize SDH.³ Already, some institutions have begun specific SDH curricula during both the early/preclinical years and the later/clinical years. Existing relevant *MedEdPORTAL* modules range from single cases introducing SDH to yearlong curricula incorporating home visits and direct mentoring but mainly are more limited, single-session experiences focusing on

preclinical/early medical school learners (e.g., Fredrick's 2-hour case-based exploration of the SDH of a Haitian child seen in clinic⁴) and/or arising from primary care or other nonacute specialties, as in McDonald, West, and Israel's longitudinal clinic-based curriculum that incorporates multiple exercises aimed at contextualizing clinical encounters through an SDH lens.⁵

Emergency departments are a window into a community and its challenges, reflecting the most critical SDH of the population they serve; as such, they are the ideal setting in which to learn about SDH.⁶ Core emergency medicine (EM) clerkships typically focus on disease management for the acutely ill and injured, with limited emphasis on the holistic care that addresses a patient's SDH—a missed educational opportunity, as reflected in the dearth of specific curricula, in *MedEdPORTAL* or elsewhere, aimed at teaching or introducing SDH in core EM courses.

Yet there have been recent calls for incorporating SDH specifically into the practice of EM in order to best care for patients.⁷ At the same time, SDH are increasingly understood as an important area of knowledge and study for all aspects of the curriculum.^{8,9} Specifically, the Liaison Committee on Medical Education (LCME) requests that schools design curricula to address this issue, per Standards 7.5 (Societal Problems) and 7.6 (Cultural Competence and Health Care Disparities), although these guidelines generally mandate only that curricula include instruction on SDH (cultural differences, disparities, “common societal problems”), without further detailing the format, content, or measurable goals to be achieved, and that students have “opportunities” to learn about SDH during their time in medical school.¹⁰ Given its urban, underserved setting, our institution is well suited for learning about most major SDH—factors that often render our patients' presentations, experience, workup, and outcomes different from the classic textbook presentations and course.

This confluence of demand for a focus on SDH—in our institution specifically and in medical education and society at large—and absence of comprehensive EM-specific SDH curricula in *MedEdPORTAL* or elsewhere led to the development of a novel SDH curriculum integrated into a mandatory 4-week EM clerkship for fourth-year medical students. The curriculum is generalizable for use by a variety of health profession learners (e.g., nurses and student nurses, physical/occupational therapists, physician assistants, social work students, residents in multiple specialties) at other institutions and in other settings.

Our mandatory fourth-year 4-week EM rotation comprises clinical shifts and didactics, with clinical experiences spread across four affiliate sites, each with a significant patient base of lower-income urban dwellers. The entire four-institution patient base is a population with extremely high rates of substance abuse and trauma, as well as employment and health insurance rates lower than the national average, among other SDH.¹¹ Our lead faculty facilitator had extensive experience in community outreach in our setting, which helped with context during development and implementation but was not necessary for faculty facilitation. Given constraints on faculty and student time (limitations heightened in EM clerkships, where shift work makes arranging group meetings a challenge), efforts were made to use a combination of independent self-directed study, off-line group work, and in-class facilitated learning, culminating in a common presentation day, making the module easy to carry out even for students doing their clinical shifts at satellite affiliates. One benefit of this modular format is that the SDH curriculum could be carried out either by the clerkship director or by the clerkship coordinator and assigned core faculty. The entire curriculum was designed as an introduction to and opportunity to explore SDH, following the LCME guidelines and the expected level of competence of our incoming fourth-year medical students.

Methods

This curriculum was developed by the associate dean of education for our institution and by one of our core EM faculty as an outgrowth of a community health elective whose objectives, it was felt, were better suited to a mandatory core clerkship. The community health elective had a format roughly similar to that presented here. It was structured and adapted for consistent use by a much larger group and then implemented by the clerkship director as follows.

On Day 1 of the clinical rotation block, during the initial course orientation session, students were given their small-group assignments for end-of-block oral presentations. Each small group had three to five members, appointed at random from the roster of students currently taking the rotation. Contact information for students, lead faculty, and the clerkship director was shared, and faculty made themselves available for questions and clarifications. In addition, the SDH in Emergency Medicine Student Guide (Appendix A) was distributed and discussed by either the clerkship director or the SDH lead faculty. This document (as well as all others pertaining to the curriculum) was also made available as a Microsoft Word document on the clerkship's learning management system (Moodle, open source). The student guide gave an overview of the three-part curriculum, along with requirements/grade points attached to each part.

Learning Activity 1: "Living" the Patient's Experience required each student to identify and interview a patient regarding his or her SDH, analyze/synthesize, and reflect. We asked students to identify a patient with a chronic illness or issues in the Emergency Department or the waiting room (following discussion with a triage nurse) or an Emergency Department patient care area, for example, a patient with diabetes, smoking, or alcohol use. Students then interviewed the patient to focus beyond the disease on social and other aspects of his or her health care (whether the patient had a primary care provider, health care insurance, etc.). The students followed the patient journey through the Emergency Department shift, charting time of arrival to bed, tests, and other items (we instructed the students to make sure they had enough time to delve deeply into these social factors and tried to ensure that they had as much choice as possible by telling them that they need not necessarily be engaged in direct clinical care of the patient as long as they were able to complete a full medical and social interview and time line). Finally, we asked that the students discuss a proposed plan of home care (or follow-up transition care) with the Emergency Department case manager or social worker (if available) and write a summary/reflection of the experience—what they learned, what surprised them, and how they would apply this knowledge to future interactions with patients (see the SDH Written Reflection Questions document, Appendix B). The SDH Written Reflection Assessment Rubric (Appendix C) was used for grading the written case summary (the SDH lead faculty graded all the written case summaries and reflections).

Learning Activity 2: Team Discussion required students to meet in preassigned small groups, selecting one of their patients to further explore his or her SDH and, as a team, generate a research plan, with the goal being a group presentation describing the societal impact of the identified SDH and potential strategies for addressing the SDH issues. At this meeting, students selected one case study they would like to present to peers and planned and created an electronic slide presentation discussing SDH (no more than five or six slides), while working to offer a solution to identified SDH issues (e.g., a handout about low-sugar diets for diabetes patients).

Learning Activity 3: SDH Oral Team Presentation required an interactive group presentation of the case decided upon in the team discussion, formally facilitated by the lead faculty. Both the team discussion and the oral team presentation were assessed using the SDH Oral Team Presentation Assessment Form (Appendix D) developed by our group. Peers were also given this form to guide discussion and feedback, but only faculty assessment was used for grading.

This final group session required a meeting room equipped with computer, projector, and screen.

Evaluation Strategy

After the final presentation day (on the last Monday of the 4-week block), the lead faculty collected all electronic presentations and written summaries, graded them, and submitted grades to the clerkship director and coordinator, who incorporated the scores into the students' final course grade.

The learning activity deliverables constituted graded requirements for the clerkship; scoring rubrics for them were developed jointly with the lead faculty, clerkship director, and associate dean of education for

the medical school. The SDH curriculum constituted 10% of overall clerkship grade, broken down as follows: 5% for the SDH written case summary and reflection and 5% for the SDH oral team presentation.

Although this curriculum was mainly designed to be an introduction to SDH rather than a comprehensive course (unachievable in a 4-week required clerkship with a wide range of student interest in the topic), some attempt was made to evaluate the curriculum from the student standpoint. At the end of the block, all students had to complete an online course evaluation in order to receive their grades for the entire clerkship. A simple evaluation tool (Appendix E) was developed at the outset of this project by faculty consensus. Given the wide range of postcurriculum evaluations used by other groups for similar curricula^{12,13} and the difficulty finding a validated instrument, we attempted to capture the tasks we hoped an introductory curriculum would accomplish—a capacity to recognize SDH, screen for them, use that knowledge to refer patients to resources, and comprehend the importance of SDH to overall health. Our questionnaire, which is in the process of being validated but had not been at the time of its use for this module, was included in the end-of-course evaluation filled out by students.

This was a curricular change requested by the institution and following LCME guidelines. It therefore by policy had to be implemented for an entire year’s worth of students to ensure consistency. Thus, our sample size was dictated by the number of students passing through the clerkship and the need to assess the program halfway through in order to address planning needs for the following year’s curriculum rather than by a power calculation.

Results

In the initial assessment period following implementation during the 2016-2017 academic year, 56 fourth-year medical students participated in our SDH curriculum.

The initial student evaluation of the SDH curriculum, which was on a 5-point scale (1 = *Hardly at All*, 5 = *To a Very High Degree*), elicited mainly positive responses. After the activities, students averaged 4.4 in response to “I am able to recognize the barriers to health that patients and families from diverse socio-economic backgrounds face,” 4.0 on “The Social Determinants of Health exercises allowed me to screen patients for social risk factors that affect their health,” and 4.1 on “This activity allowed me to apply knowledge of social determinants and risk factors to determine what would be appropriate referrals to resources.” Finally, “I feel it is important to recognize and address the social determinants of health as part of whole patient care” received an average response of 4.6. Full results can be reviewed in the [Table](#).

Table. Social Determinants of Health Exercise 2016-2017^a

Statement	No. of Responses	Mdn	Average	SD
The Social Determinants of Health exercises allowed me to screen patients for social risk factors that affect their health.	56	4	4.0	0.98
I am able to recognize the barriers to health that patients and families from diverse socio-economic backgrounds face.	56	5	4.4	0.66
This activity allowed me to apply knowledge of social determinants and risk factors to determine what would be appropriate referrals to resources.	56	4	4.1	0.94
I was able to collaborate with colleagues as a team to discuss effect of social and chronic health issues and formulate a plan to mitigate effects of social determinants of health.	56	4	4.1	0.92
I was able to practice skills of oral presentations on Social Determinants of Health topics.	56	4	4.2	0.93
I feel it is important to recognize and address the social determinants of health as part of whole patient care.	56	5	4.6	0.60

^aRated on a 5-point scale (1 = *Hardly at All*, 5 = *To a Very High Degree*).

The resulting resources submitted and presented by the students, mainly in the form of electronic slide decks, served as the basis for in-depth, student-led conversations on the particular SDH affecting our population. Appended to this publication is an example (Appendix F) that demonstrates one student-group’s exploration of a particular patient’s SDH.

Discussion

Our SDH curriculum is an easily implementable method of introducing SDH into any EM clerkship, a setting logically and logistically suited to the topic. Because the module was designed specifically for EM students and to be administered in the context of an EM clerkship as an introduction to (rather than a comprehensive review of) SDH, it requires only two in-person faculty sessions—a brief one (usually 15-20 minutes) at clerkship orientation and one toward the end of the block—while incorporating individual, group, written, and oral presentations as well as independent review and synthesis of evidence-based sources.

This multidimensional case-based format allows the curriculum to span multiple echelons in the cognitive and affective domains of learning described in Bloom's taxonomy, covering complexity levels from basic (knowledge/remember) to metacognitive (evaluation/create).¹⁴ The activities exploit many skills thought to be specific to adult learners—self-directed learning, readiness to learn based on a need to know, task-centered learning—while allowing significant learner control of the format and content of the activities. The module supports translational learning by offering the opportunity for students to change the framework in which they view their patients and disease states (from a simply pathophysiologic model to a more biopsychosocial one).¹⁵

Because facilitation and discussion require some level of understanding of the social factors affecting the community in which students are learning, it may be helpful—but is not strictly necessary—to have a lead faculty who is involved in social EM or community engagement endeavors. We used one lead facilitator for both student presentations and grading. Having just one faculty is likely not a feasible option for many programs due to competing demands on faculty schedules (vacation, clinical shifts, other teaching/administrative demands, etc.). We recommend a half-hour faculty development session to introduce potential facilitators to the format, rubric, and outcomes. We have also found it useful to review a sample grading of an actual student write-up and presentation with faculty, particularly when the rubrics were being used for summative assessments.

We have used a method where potential faculty facilitators are asked to sit in on a session to observe it in action before leading one on their own. Finally, our students have come to the senior year with a strong foundation in SDH since we have a robust longitudinal course in preclerkship years (a credit-bearing Health Equity and Social Justice course) and have mapped SDH experiences to several core third-year clerkships, such as poverty simulation exercises in the pediatric core clerkship. If a similar introduction to SDH does not exist in a curriculum, we recommend adding an appropriate didactic session prior to implementing this module since, although designed as an introduction, it does require a fair amount of independent recognition of what might be SDH, as well as enough cultural competence to conduct interviews in a diverse underserved population.

It is worth noting here that in addition to their educational value to students, the combined results of the individual write-ups and the student-led presentations have developed into a valuable snapshot of the SDH affecting the patients in our population, so much so that our department is considering basing interventions and resource allocation on the factors most frequently noted by students participating in the core clerkship.

One potential problem with the curriculum's format that we encountered should be noted here: As in society at large, there was much disagreement among students on how some SDH should be addressed and what policy changes and government support were merited for a given social factor. The interactive nature of this curriculum led to a number of heated debates that, at least anecdotally, some students found frustrating or even frightening. It seems to have been a small percentage of our students who felt this way, with most, per subjective, ad hoc feedback, finding the level of engagement to be bracing. Still, further study is merited to assess the impact of an exercise like this on interstudent relationships and the educational environment.

Possible limitations to students receiving the full value of the experience include variability in patients and the factors affecting their health (with scarcity of wide-ranging SDH factors potentially a larger problem in communities with less diversity or fewer negative social factors), the student-driven nature of much of the work, and finding concrete, quantitative metrics to assess what students have learned, as well as validated measures to evaluate the curriculum from the student point of view. Nevertheless, we believe this is a valuable module that has been well received by the students, as evidenced by the high score on the importance of SDH item in our questionnaire. The module can be adapted to many acute care settings, allowing students to engage in and learn from an in-depth exploration of social determinants of their patients' health. The module could easily serve as the initial or inspiring piece in a more in-depth exploration of SDH for a community health elective and could be modified for health professions learners at different levels.

In summary, we have developed a longitudinal curriculum aimed at introducing the practical consideration of SDH into our students' course of study, with the goal of readying students to include such consideration in their future training and practice. We have aimed the curriculum at a fourth-year medical student level, implementing it as a required, graded module in a mandatory 4-week EM clerkship, resulting in generally high levels of student engagement and positive responses on an informal questionnaire exploring the curriculum's impact (with the caveat that the student-led conversation may require careful moderation). The final presentations produced by the students are already being studied as a reflection of the needs of the community in which we practice, and the curriculum itself is ripe for further study—specifically, into its adaptability to and impact on other learner groups, the validity of the rubrics and evaluation questionnaire used here, and even potentially the impact on the perceived attentiveness to SDH of students who have undergone the curriculum (e.g., via survey of program directors after our students' graduation).

Shannon E. Moffett, MD: Assistant Professor of Emergency Medicine, Rutgers New Jersey Medical School/University Hospital—Newark; EM Clerkship Director/Director of UME, Rutgers New Jersey Medical School/University Hospital—Newark

Hosseinali Shahidi, MD, MPH: Associate Professor of Emergency Medicine, Rutgers New Jersey Medical School/University Hospital—Newark; Chief, Division of Community Medicine and Urban Health, Rutgers New Jersey Medical School/University Hospital—Newark; Chief Collaborating Physician, Rutgers Community Health Center, School of Nursing, Rutgers

Harsh Sule, MD, MPP: Assistant Professor of Emergency Medicine, Rutgers New Jersey Medical School/University Hospital—Newark; Emergency Medicine Residency Program Director, Rutgers New Jersey Medical School/University Hospital—Newark; Associate Director, Rutgers NJMS Office of Global Health, Rutgers New Jersey Medical School/University Hospital—Newark

Sangeeta Lamba, MD, MS-HPed: Professor of Emergency Medicine, Rutgers New Jersey Medical School/University Hospital—Newark; Associate Dean of Education, Rutgers New Jersey Medical School/University Hospital—Newark

Disclosures

None to report.

Funding/Support

None to report.

Ethical Approval

The Rutgers Health Sciences Institutional Review Board—Newark approved this study.

References

1. Commission on Social Determinants of Health *Closing the Gap in a Generation: Health Equity Through Action on the Social Determinants of Health—Final Report of the Commission on Social Determinants of Health*. Geneva, Switzerland: World Health Organization; 2008.
2. Skochelak SE, Stack SJ. Creating the medical schools of the future. *Acad Med*. 2017;92(1):16-19. <https://doi.org/10.1097/ACM.0000000000001160>
3. Pollock DA, Lowery DW, O'Brien PM. Emergency medicine and public health: new steps in old directions. *Ann Emerg Med*. 2001;38(6):675-683. <https://doi.org/10.1067/mem.2001.119457>

4. Fredrick NB. Exploring health systems within the context of social determinants of health: a global health case study. *MedEdPORTAL*. 2016;12:10457. https://doi.org/10.15766/mep_2374-8265.10457
5. McDonald M, West J, Israel T. From identification to advocacy: a module for teaching social determinants of health. *MedEdPORTAL*. 2015;11:10266. https://doi.org/10.15766/mep_2374-8265.10266
6. Bernstein SL, Haukoos JS. Public health, prevention, and emergency medicine: a critical juxtaposition. *Acad Emerg Med*. 2008;15(2):190-193. <https://doi.org/10.1111/j.1553-2712.2008.00055.x>
7. Anderson ES, Lippert S, Newberry J, Bernstein E, Alter HJ, Wang NE. Addressing social determinants of health from the emergency department through social emergency medicine. *West J Emerg Med*. 2016;17(4):487-489. <https://doi.org/10.5811/westjem.2016.5.30240>
8. Lago S, Cantarero D, Rivera B, et al. Socioeconomic status, health inequalities and non-communicable diseases: a systematic review. *Z Gesundh Wiss*. 2018;26(1):1-14. <https://doi.org/10.1007/s10389-017-0850-z>
9. Steketee G, Ross AM, Wachman MK. Health outcomes and costs of social work services: a systematic review. *Am J Public Health*. 2017;107(suppl 3):S256-S266. <https://doi.org/10.2105/AJPH.2017.304004>
10. Liaison Committee on Medical Education. *Functions and Structure of a Medical School: Standards for Accreditation of Medical Education Programs Leading to the MD Degree*. Washington, DC: Liaison Committee on Medical Education; 2016.
11. Bowers L, Gann C, Elser S. *Small Area Health Insurance Estimates: 2015*. Washington, DC: US Census Bureau; 2017.
12. Klein M, Beck A, Kahn R, et al. Video curriculum on screening for the social determinants of health. *MedEdPORTAL*. 2013;9:9575. https://doi.org/10.15766/mep_2374-8265.9575
13. Drake C, Keepport M, Chapman A, Chakraborti C. Social Contexts in Medicine: a patient-centered curriculum empowering medical students to provide contextualized care. *MedEdPORTAL*. 2017;13:10541. https://doi.org/10.15766/mep_2374-8265.10541
14. Adams NE. Bloom's taxonomy of cognitive learning objectives. *J Med Libr Assoc*. 2015;103(3):152-153. <https://doi.org/10.3163/1536-5050.103.3.010>
15. Ross-Gordon JM. Research on adult learners: supporting the needs of a student population that is no longer nontraditional. *Peer Rev*. 2011;13(1):26-29.

Received: May 25, 2018 | Accepted: September 23, 2018 | Published: January 4, 2019