

## Integrating Social Determinants of Health Into Clinical Training During the COVID-19 Pandemic

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### Abstract

**Introduction:** Social determinants of health (SDOH) are often incorporated to some degree within preclinical medical education, but no validated curriculum exists for the incorporation of SDOH and the competencies necessary to address nonclinical contributors to health, within clinical educational programming. The COVID-19 pandemic provided an opportunity to implement this programming in a virtual setting.

**Methods:** Using pedagogy developed by Freire and Dewey, we created a service-learning curriculum supported by reflection sessions, workshops on implicit bias, and journal clubs. We used flipped classroom and adult-learning theory to develop and implement this curriculum.

**Results:** Learners showed significant enthusiasm for this novel curriculum, identifying the incorporation of SDOH and related competencies in clinical education as unique and imperative, requesting that the content be further integrated within the clinical experience of State University of New York Downstate Health Sciences University.

**Conclusion:** We developed a service-based curriculum that succeeded in developing further understanding of how patients experience their health in Central Brooklyn, and provided a space for students to generate emotional and interpersonal expertise that is important for the growth of clinicians in caring for patients in underserved and underresourced communities.

## Introduction

The influence of social determinants of health (SDOH) on health outcomes is well understood, contributing to approximately 80% of patient morbidity and mortality.<sup>1</sup> Though concepts addressing the management of SDOH should be introduced during medical students' preclinical education, no validated educational methodology exists to provide guidance on how to integrate SDOH within the competency-based training of medical students' clinical years. To respond to the demands of the new learning environment post-COVID-19, a telehealth elective was created to encourage student participation in patient encounters. Asynchronous and synchronous educational materials helped frame patient encounters with evidence-based guidelines and safe spaces for individual and group reflection. COVID-19, and the ensuing social, economic, and emotional disruptions, provided an opportunity to bolster the knowledge base developed by

students during preclinical years with a competency-based curriculum on SDOH and cultural humility. This service-driven programming allowed students to gain important skills in interpersonal communication, case management, and an understanding of the role of SDOH in our patients' lives. Simultaneously, patients in the community were provided nonclinical psychosocial support during the spring 2020 wave of COVID-19. Guided by the pedagogy of Friere and Dewey, our curriculum allowed SDOH to be taught in a setting where altruism, empathy, and humility were reinforced.<sup>2,3</sup>

## Educational Methods

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Our curriculum was composed of a student-driven community outreach component, where calls were made to University Hospital Brooklyn (UHB) patients to assess for nonclinical needs and provide psychosocial support. We derived outreach protocols from validated SDOH screening tools (Accountable Health Communities [AHC]; Health-Related Social Needs [HRSN], Protocol for Responding to and Assessing Patients' Assets, Risks, and Experiences [PRAPARE]; and AAFP Social Needs Screening Tool), and informed by anecdotal expertise on the Central Brooklyn community. Decision algorithms linked positive triggers with resource lists that helped students connect patients with community-based organizations and government resources. Due to Association of American Medical Colleges limitations during COVID-19, this elective was branded nonclinical and any clinical complaints were referred to an on-call list of faculty attendings.

We organized the elective into weekly sections. Each week began with a journal club session, followed by implicit bias training and ending in individual and group reflection sessions. Using the flipped classroom and service-learning models, we first provided students readings that help establish foundational knowledge on relevant clinical trends as well as the skills necessary to provide competent care to underserved communities. These competencies were reinforced by patient interactions and interactive implicit bias trainings. To bring closure, each week ended with reflective sessions where an open, supportive learning environment allowed students to organically crystallize important lessons from the week and share them with the group. We based the learning objectives of the didactic components on faculty review of student reflections, allowing the student experience to play a central role in curriculum building.

Implicit bias training and journal club sessions ensured students were appropriately equipped to interact with economically vulnerable and socially traumatized communities in Central Brooklyn. Journal club sessions allowed students to review, analyze, and critically discuss research addressing SDOH, cultural humility, and innovations in providing care to marginalized communities. Implicit bias training empowered students to understand the role of personal beliefs and culture in interpersonal reactions. Through these sessions students built upon an existing fund of knowledge gained in preclinical and clinical education to enhance clinical skills and the health care quality provided to UHB patients.

Group reflection sessions were the most important didactic component. At the end of each week students completed personal reflections that faculty used to drive a moderated group discussion. Teaching faculty reviewed written student reflections and discussed themes that would be used to guide the group discussion, where faculty moderators built on the anecdotal wisdom students gained through the services provided to UHB patients. Using the student experiences to drive the learning objectives and educational content ensured the educational needs of learners were being met and allowed the curriculum to adjust to the evolving needs of the local community.

The companion article "Medical Students Screen for SDOH: A Service-Learning Model to Improve Health Equity" provides an analysis of this project from the perspective of medical students.

Our institutional review board (IRB) gave this curriculum a “determination of not research” exemption (case 1596508-1), and the IRB deemed exempt the component of the curriculum that resulted in patient outreach (case 1600930-1).

## Results

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Since initiating this service activity in March there have been 35 student participants, reaching approximately 1,000 adult patients and identifying needs for community-based resources after 393 screens. Additionally, there were 32 social work referrals generated, 217 medication refill requests, 102 intradepartment appointment requests, and 31 appointment requests with other departments.

Student reflections identified several shared themes including how students experienced interacting with patients over the phone, in which they created longitudinal relationships with consistent follow-up and assistance with community-based resources. Furthermore, students were able empathize and sympathize with patients during the shared experience of the COVID-19 pandemic. Student participants were often surprised at the level of chronic crisis many of the families in Central Brooklyn suffer from, and how current pandemic-related problems seem trivial when taken in context of preexisting daily struggles.

Summative feedback collected from students demonstrated a singular and explicit incorporation of SDOH in a clinical experience that is not repeated elsewhere. Communicating with patients while at home, and addressing nonclinical contributors to health, developed a unique knowledge base and communication skill set that helped engender a spirit of sympathy and humility between students and patients. Student respondents also encouraged further incorporation of the rotation within regular clinical care.

## Conclusion

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As medical education continues to evolve, new technology provides an opportunity for educators to develop novel curriculum and expand the venues through which students can interact with patients. The initial COVID-19 crisis and associated quarantine provided a unique opportunity to trial innovative curriculum and address unmet nonclinical needs within our patient community. By participating in this service-learning curriculum, students were able to develop rich connections with patients where they grew as providers, gained humility in their approach to patients, and developed a new understanding of the limits to clinical care. Lastly, as an additional benefit, replication of this curriculum can allow hospitals to leverage their student workforce to expand support for patient communities and help address nonclinical SDOH that are often beyond the reach of clinicians.

## Tables and Figures

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**Table 1: Weekly Schedule With Hour Obligation And Summative Feedback**

<p style="text-align: center;"><b>Week 1: Learning Critical Reading</b></p> <p><i>Synchronous Learning</i>  Monday: Orientation to SDOH elective (student: 1 hour, facilitator: 1 hour)  Wednesday: Journal club. Learning critical reading: a review of the methodologies commonly used to assess SDOH (student: 1 hour, facilitator: 1 hour) *  Friday: Reflection session (student: 1 hour, facilitator: 2-3 hour [session and reading reflections—time based on number of participants])</p> <p><i>Asynchronous Learning</i></p> <ul style="list-style-type: none"> <li>• Journal club submission for week one articles (student: 2 hours)</li> <li>• Introduction to implicit bias homework: project implicit race test, read articles, reflection questionnaire (student: 3 hours) **</li> <li>• Reflection writing assignment (student: 1 hour)</li> <li>• Patient outreach via telemedicine assessing social determinants of health (student: 12 hours minimum)</li> </ul>
<p style="text-align: center;"><b>Week 2: SDOH and Patient Outcomes</b></p> <p><i>Synchronous Learning</i>  Monday: Journal club. SDOH and patient outcomes: research discussion assessing the effect of SDOH on health outcomes (student: 1 hour, facilitator: 1 hour) *  Wednesday: Implicit bias reflection session (student: 1 hour, facilitator: 2-3 hour [session and reading reflections—time based on number of participants])  Friday: Reflection session (student: 1 hour, facilitator: 2-3 hour [session and reading reflections – time based on participants])</p> <p><i>Asynchronous Learning</i></p> <ul style="list-style-type: none"> <li>• Journal club submission for week two articles (student: 2 hours)</li> <li>• Implicit Bias reflection based on cases, videos, and articles (student: 2 hours) **</li> <li>• Reflection writing assignment (student: 1 hour)</li> <li>• Patient outreach via telemedicine assessing social determinants of health (student: 12 hours minimum)</li> </ul>
<p style="text-align: center;"><b>Week 3: Cultural Humility in Patient Interactions</b></p> <p><i>Synchronous Learning</i>  Wednesday: Journal club: cultural humility in patient interactions: a session that focuses on understanding and discussing the differences between cultural competency and cultural humility (student: 1 hour, facilitator: 1 hour) *  Friday: reflection session (student: 1 hour, facilitator: 2-3 hour [session and reading reflections—time based on number of participants])</p> <p><i>Asynchronous Learning</i></p> <ul style="list-style-type: none"> <li>• Journal club submission for week three articles (student: 2 hours)</li> <li>• Reflection writing assignment (student: 1 hour)</li> <li>• Patient outreach via telemedicine assessing social determinants of health (student: 12 hours minimum)</li> </ul>
<p style="text-align: center;"><b>Week 4: Strategies to Address SDOH Using Technology</b></p> <p><i>Synchronous Learning</i>  Wednesday: Journal club: strategies to address SDOH using technology (student: 1 hour, facilitator: 1 hour) *  Friday: reflection session (student: 1 hour, facilitator 2-3 hours (session and reading reflections—time based on number of participants))</p> <p><i>Asynchronous Learning</i></p> <ul style="list-style-type: none"> <li>• Journal club submission for week four articles (student: 2 hours)</li> <li>• Reflection writing assignment (student: 1 hour)</li> <li>• Patient outreach via telemedicine assessing social determinants of health (student: 12 hours minimum)</li> </ul>
<p style="text-align: center;"><b>Summative Feedback</b></p> <p>This postcourse feedback was created of open-ended questions that evaluated the students experience, the curriculum and what they learned.</p> <p><i>Telemedicine Elective Experience</i></p> <ul style="list-style-type: none"> <li>• How important are experiences such as the telemedicine elective to medical education? Why?</li> <li>• Do you see yourself using skills gained in this elective in your future career? Please explain.</li> <li>• How many hours per week did you spend making phone calls?</li> <li>• How many phone calls were you able to make each hour?</li> </ul> <p><i>Social Determinants of Health</i></p> <ul style="list-style-type: none"> <li>• Is SDOH valued in current medical curriculum? Why or why not?</li> <li>• Please compare this experience with other educational programming addressing SDOH at Downstate.</li> <li>• Overall Curriculum</li> <li>• What was your favorite aspect/programming in this curriculum? Please explain.</li> <li>• How can we improve this curriculum? Please explain.</li> <li>• On average, how many hours per week did you spend with asynchronous material (reflections, readings, etc)? less than 1 hour; 2-5 hours; 6-10 hours; 11-15 hours; 16-20 hours; more than 20 hours</li> </ul> <p>Please use the following space for additional comments/concerns.</p>

\* See Table 3.

\*\* See Table 4.

**Table 2: Curriculum Learning Objectives and Directions**

<p style="text-align: center;"><b>Journal Club</b></p> <p>A review of research assessing the role of SDOH in the patient experience and its role in health outcomes, as well as a review of methodologies used to assess SDOH.</p> <p>Objectives:</p> <ol style="list-style-type: none"><li>1. Review four articles discussing SDOH and its role in health care.</li><li>2. Identify a hypothesis, research methodology and type of analysis for each article.</li><li>3. Discuss how data-driven research can be used to improve healthcare outcomes.</li><li>4. Critically apply existing research to health disparities in Central Brooklyn.</li></ol> <p>Directions: Create a short response for each article answering the following questions:</p> <ol style="list-style-type: none"><li>1. Who wrote the paper and what are their affiliations?</li><li>2. If relevant, state the research hypothesis and study design, including methodology, targeted populations with inclusion/exclusion criteria, including sources of bias.</li><li>3. Appraise existing evidence and cited research.</li><li>4. Summarize study results and discussion in two sentences</li><li>5. Explain the relevance for this elective rotation?</li><li>6. Explain the implications for clinical care in Central Brooklyn and SUNY Downstate.</li><li>7. Suggest follow-up studies, research or inquiries you could make.</li></ol>
<p style="text-align: center;"><b>Implicit Bias</b></p> <p>Objectives:</p> <ol style="list-style-type: none"><li>1. Increase knowledge about implicit bias</li><li>2. Explain how implicit bias affects the medical system including medical decision making, care received or not received by patients, etc.</li><li>3. Increase in self-awareness of existing implicit biases</li></ol> <p>Directions: After completing the curriculum write a reflection on what you learned regarding implicit bias and how you feel about implicit bias including your test results.</p>
<p style="text-align: center;"><b>Reflection Session</b></p> <p>Review and share students' patient interaction experiences of the past week.</p> <p>Objectives:</p> <ol style="list-style-type: none"><li>1. Reflect on the patient interaction each week.</li><li>2. Reinforce competencies of empathy and cultural humility in a group setting.</li><li>3. Discuss the role of case-management, community-based organizations and public social resources in preventing disease and producing health.</li></ol> <p>Directions: Write a reflection about 250-500 words in length regarding your patient encounters and what you learned during the week.</p>

**Table 3: Journal Club Articles**

<p><b>Week 1: Learning Critical Reading: A Review of the Methodologies Commonly Used to Assess SDOH</b></p> <ul style="list-style-type: none"> <li>Coffman MJ, de Hernandez BU, Smith HA, McWilliams A, Taylor YJ, Tapp H, Schuch JC, Furuseth O, Dulin M. Using CBPR to Decrease Health Disparities in a Suburban Latino Neighborhood. <i>Hisp Health Care Int.</i> 2017 Sep;15(3):121-129. doi: 10.1177/1540415317727569.</li> <li>Renzaho AM, Romios P, Crock C, S�nderlund AL. The effectiveness of cultural competence programs in ethnic minority patient-centered health care—a systematic review of the literature. <i>Int J Qual Health Care.</i> 2013;25(3):261-269. doi:10.1093/intqhc/mzt006</li> <li>Ompad DC, Galea S, Caiaffa WT, Vlahov D. Social determinants of the health of urban populations: methodologic considerations. <i>J Urban Health.</i> 2007;84(3 Suppl):i42-i53. doi:10.1007/s11524-007-9168-4</li> <li>Allen JD, Leyva B, Hilaire DM, Reich AJ, Martinez LS. Priorities, concerns and unmet needs among Haitians in Boston after the 2010 earthquake. <i>Health Soc Care Community.</i> 2016;24(6):687-698. doi:10.1111/hsc.12217</li> </ul>
<p><b>Week 2: SDOH and Patient Outcomes: Research Discussion Assessing the Effect of SDOH on Health Outcomes</b></p> <ul style="list-style-type: none"> <li>Bailey ZD, Krieger N, Ag�nor M, Graves J, Linos N, Bassett MT. Structural racism and health inequities in the USA: evidence and interventions. <i>Lancet.</i> 2017;389(10077):1453-1463. doi:10.1016/S0140-6736(17)30569-X</li> <li>Chung EK, Siegel BS, Garg A, et al. Screening for Social Determinants of Health Among Children and Families Living in Poverty: A Guide for Clinicians. <i>Curr Probl Pediatr Adolesc Health Care.</i> 2016;46(5):135-153. doi:10.1016/j.cppeds.2016.02.004</li> <li>Friedman EE, Dean HD, Duffus WA. Incorporation of Social Determinants of Health in the Peer-Reviewed Literature: A Systematic Review of Articles Authored by the National Center for HIV/AIDS, Viral Hepatitis, STD, and TB Prevention. <i>Public Health Rep.</i> 2018;133(4):392-412. doi:10.1177/0033354918774788</li> <li>Hahn RA, Truman BI, Williams DR. Civil rights as determinants of public health and racial and ethnic health equity: Health care, education, employment, and housing in the United States. <i>SSM Popul Health.</i> 2018;4:17-24. doi:10.1016/j.ssmph.2017.10.006</li> </ul>
<p><b>Week 3: Cultural Humility in Patient Interactions: A Session That Focuses on Understanding and Discussing the Differences Between Cultural Competency and Cultural Humility</b></p> <ul style="list-style-type: none"> <li>Beach MC, Price EG, Gary TL, et al. Cultural competence: a systematic review of health care provider educational interventions. <i>Med Care.</i> 2005;43(4):356-373. doi:10.1097/01.mlr.0000156861.58905.96</li> <li>van Ryn M, Fu SS. Paved with good intentions: do public health and human service providers contribute to racial/ethnic disparities in health?. <i>Am J Public Health.</i> 2003;93(2):248-255. doi:10.2105/ajph.93.2.248</li> <li>Tervalon M, Murray-Garcia J. Cultural humility versus cultural competence: a critical distinction in defining physician training outcomes in multicultural education. <i>J Health Care Poor Underserved.</i> 1998;9(2):117-125. doi:10.1353/hpu.2010.0233</li> <li>Sequist TD, Fitzmaurice GM, Marshall R, et al. Cultural competency training and performance reports to improve diabetes care for black patients: a cluster randomized, controlled trial. <i>Ann Intern Med.</i> 2010;152(1):40-46. doi:10.7326/0003-4819-152-1-201001050-00009</li> </ul>
<p><b>Week 4: Strategies to Address SDOH Using Technology</b></p> <ul style="list-style-type: none"> <li>Uscher-Pines L, Fischer S, Tong I, Mehrotra A, Malsberger R, Ray K. Virtual First Responders: the Role of Direct-to-Consumer Telemedicine in Caring for People Impacted by Natural Disasters. <i>J Gen Intern Med.</i> 2018;33(8):1242-1244. doi:10.1007/s11606-018-4440-8</li> <li>Lurie N, Carr BG. The Role of Telehealth in the Medical Response to Disasters. <i>JAMA Intern Med.</i> 2018;178(6):745-746. doi:10.1001/jamainternmed.2018.1314</li> <li>Krieger N, Huynh M, Li W, Waterman PD, Van Wye G. Severe sociopolitical stressors and preterm births in New York City: 1 September 2015 to 31 August 2017. <i>J Epidemiol Community Health.</i> 2018;72(12):1147-1152. doi:10.1136/jech-2018-211077</li> <li>Lazow MA, Real FJ, Ollberding NJ, Davis D, Cruse B, Klein MD. Modernizing Training on Social Determinants of Health: A Virtual Neighborhood Tour is Noninferior to an in-Person Experience. <i>Acad Pediatr.</i> 2018;18(6):720-722. doi:10.1016/j.acap.2018.04.007</li> </ul>

**Table 4: Implicit Bias Curriculum**

**Articles**

- Chapman EN, Kaatz A, Carnes M. Physicians and implicit bias: how doctors may unwittingly perpetuate health care disparities. *J Gen Intern Med*. 2013 Nov;28(11):1504-10. doi: 10.1007/s11606-013-2441-1. Epub 2013 Apr 11.
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**Project Implicit Race Test**

- Complete the project implicit Race exam <https://implicit.harvard.edu/implicit/selectatest.html>
- Reflection questions regarding about results of the test including how did the results make you feel? Were you disturbed by your results? Were you surprised?

**Watch YouTube Videos**

- Starbucks Racial Bias Video (<https://www.youtube.com/watch?v=eDPTVEqkGa4>)
- Inside the AC360 doll study (<https://www.youtube.com/watch?v=DYCz1ppTjiM>)

**Read Two Obstetrics Cases From the “Everyone Project Implicit Bias Toolkit”**

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