

## Research Article

# From Dams to Tides: Eliminating Health Disparities through Interprofessional Education

Elizabeth Ching<sup>1</sup> and Aara Amidi-Nouri<sup>2</sup>

<sup>1</sup>Occupational Therapy Department, Samuel Merritt University, Oakland, California, United States

<sup>2</sup>School of Nursing, Samuel Merritt University, Oakland, California, United States

### ABSTRACT

**Background:** This article introduces an innovative model for interprofessional learning to reduce health disparities. The Interprofessional Reducing Health Disparities Series aimed to have health science students critically reflect on implicit bias, social determinants of health, and the root causes of health disparities in order to affect change at the individual, team, and population level.

**Methods:** Teams of interprofessional health science students built trust and rapport with each other during three sessions in the academic year by participating in interactive learning scenarios about the causation of health disparities. The

culminating experience was a mock city council meeting where teams submitted their proposals to gain limited funds for health initiatives.

**Results:** The interprofessional teams utilized their discipline-specific expertise collectively to problem solve systemic health issues affecting communities of color in local neighborhoods.

**Discussion:** In this paper, we offer the Interprofessional Health Disparities Series as a template, and we share our insight which we gained from piloting this educational endeavor.

**Keywords:** Interprofessional; Health disparities; Implicit bias; Social determinants of health

### Background

Healthy people 2020 [1] identifies the reduction and elimination of health disparities as one of its overarching goals. This was also a goal of Healthy People 2010, and 2000, yet, despite 3 decades of emphasis, little has improved, and in fact, many health disparities have worsened [2]. The World Health Organization (WHO) has made addressing the social determinants of health one of its six priority areas [3] and recognizes that educating future healthcare providers as a fundamental requirement of the health and education systems [4,5]. Most accrediting organizations for health sciences have articulated standards related to cultural competence. In the health professions field, the greatest number of published studies related to health disparities is in nursing and medicine. A systematic review of health disparities content in nursing curricula revealed many offerings; however, the authors noted that confronting the root causes of inequalities are less emphasized, and they recommend nurses taking this direction for the ultimate goal of eradication of inequalities [6]. In a systematic review of medicine [7], the authors identified that there is insufficient training of medical students to provide quality care to vulnerable populations; there is a lack of clarity for which key elements are needed to integrate into the curriculum.

The complex nature of the social determinants of health is best addressed through interprofessional education (IPE) [8-11]. Most published IPE studies tend to be focused on IPE, not health disparities. IPE may be defined as two or more health professions collaborating to create a learning environment [12] to improve health outcomes; however, the recommendation is to have greater representation of the health workforce through inclusion of multiple disciplines, including workers from other sectors [13]. Because interdisciplinary teams of healthcare professionals are utilized to provide holistic care to patients in healthcare settings,

it is also necessary to educate health science students together or interprofessionally on communicating with one another for continuity of care for patients. Typically, culturally responsive practices are taught separately within each discipline. With IPE, the rationale for teaching culturally responsive practices as an overarching framework to reduce health disparities is to start students contributing to a team approach early in their academic journey. By using IPE, once students become practitioners, they will already be comfortable making their discipline-specific contribution to the interprofessional team. Ultimately, the goal is to provide better health outcomes for patients [14]. In a meta-analysis of IPE studies, there was great variability in representation of professions [14]. The authors noted a power differential within these educational endeavors depending on which fields were included, with medicine and physical therapy typically at the top of the hierarchy; limited studies are reported for podiatry. Most studies did not include student ethnicity; the primary demographics collected were discipline and gender [15]. Other data involved the combination of courses taken, hours, range, etc. [16]. The authors note that there is little consistency as to the timing of when students take such a course in their program, ranging from students' first year to their final year. The faculty teaching IPE courses should be reflective of the various professions represented by their students, given that students need to see role models from their own professions [17]; however, the studies did not often describe the faculty who provided the teaching. The race of the faculty should also reflect students [18]. Measurement of IPE effectiveness has typically been student-reported gains through pre/post measures that are Likert-scale based. This approach emphasizes IPE as an intervention, rather than a process [14]. The authors recommend moving away from cause and effect measurement approaches and suggest instead that longitudinal data that includes the patients' perspective be adopted. This is

congruent with the IOM model of lifelong learning, which IPE is not an intervention-- longitudinal data is needed [13].

The ideal educational approach to reducing health disparities is a combination of didactic, fieldwork, and service learning [18] to further a service providers' understanding of the population served. However, it has been well documented that such experiences can lead to reinforcing stereotypes and do not improve outcomes in the population served. Sleeter [19] discussed how urban children's reading levels showed no improvement based on such training. It is critical that curricular initiatives deepen students' understanding of their preconceived notions. Much of the education related to cultural competence and health disparities is knowledge acquisition of other cultures from the white practitioner's perspective [19,20]. A medical position paper [21] recommends the inclusion of teaching about attitudes and that the knowledge component include causes as well as solutions to eliminating health disparities [22]. The focus of multicultural education for health professionals has often been on increasing cultural knowledge of the practitioners by extracting information from patients rather than on the crucial concept of the health professional being skilled at having a dialogue about race and racism. The skilled dialogue on race and racism is integral to contributing to the health and wellness of the patient along with development of a healthcare professional. The evidence from social psychology includes implicit bias, explicit bias, and aversive racism as key concepts to recognizing how to reduce health disparities. Therefore, our study was informed by critical race theory and a constructivist pedagogical approach [23] through a resiliency framework [24].

## Methods

### Call to action

As a health sciences university, interprofessional education (IPE) has existed between the departments both formally and informally for decades; nevertheless, it was not until 2012 when our IPE strategic initiative within the academic division was formally established. Like many IPE programs across the nation, our university's primary focus for IPE has been on safety and communication; health disparities was not a central topic, even though, positively transforming the experience of care in diverse communities is part of our university's mission statement [25]. Cultural competency concepts related to knowledge and skills are integrated in our programs as required by accrediting bodies. This broad approach, however, does not consistently address the providers' attitudes that are endemic in the provision of care to racial and ethnic minorities in clinical settings. Thus, the IPE committee chair appointed an IPE health disparities subcommittee (IHDS) charged with creating an IPE course focused specifically on health disparities.

### Faculty selection

After the IPE committee on campus determined that it was necessary to have a pilot program to educate health science students on health disparities, a subcommittee was created. Professors with expertise in teaching about reducing health disparities joined the subcommittee with faculty representation from nursing, occupational therapy, physical therapy, and physician assistant. There was no podiatry faculty on the

subcommittee. However, the physician from the physician assistant program was present; therefore, medicine was represented. Moreover, the physician identifies as male, thus serving as a role model for male students. Of the five participating professors, three professors identify as people of color. Faculty of color serves as role models for students of color [26]. In the IHDS program, the program developers were intentional in assuring that both white students and students of color had role models in the participating faculty of the IPE health disparities series.

### Development

Students have witnessed inequality in their own lives, and they bring their life experiences into the classroom. Our task as facilitators was to tap into this rich resource of first-hand accounts, and help the students understand some of the structural barriers inherent in our society which prevent all of our people from receiving the quality healthcare which they need and deserve. The specific focus on health disparities arose from discussions of three interrelated concepts: health inequalities, health inequities, and health disparities. The subcommittee members did not hold mutually understood meaning of these terms; thus, definitions from the Office of Minority Health (OMH) were adopted as defining terms, and faculty members were all asked to complete the OMH cultural competency modules [27]. We agreed that the course needed to supplement what students were already learning in their regular program courses to deepen their understanding of the causes of health disparities, and their role in *how* to actively reduce health disparities. Recognizing that awareness is only a first, albeit necessary, step, the objectives were developed to reflect gains beyond awareness. Four objectives were created (Table 1). In considering the rigor and pace of the programs and immersive clinical and simulation experiences, we chose a format that was reasonable, and spaced over the course of a year so that students' clinical experiences would deepen over time as a result of reflection and growth between the sessions. The first session was in fall semester, with the second and third session in the following semester (spring). Each session was designed to build upon the previous, and there were assignments between sessions to help students internalize their learning. The course was published on our learning management system (canvas), and designated as a no-fee, no-credit elective course.

### The assumptions underpinning our curriculum are as follows:

#### Assumptions:

- Health disparities can be reduced.
- Reduction of health disparities can improve health outcomes overall.
- Reduction of health disparities requires reduction of stereotyping.
- Balanced perspectives include "insider" voices and historical context; insider voices can help dismantle commonly-held stereotypes and taken-for-granted meanings.
- The perspectives of students and the communities-at-large matter.

**Table 1:** The Interprofessional Reducing Health Disparities Program.

Category	Session 1	Session 2	Session 3
<b>Timing</b>	3 hours, mid-semester in Fall, evening session with dinner meal	3 hours, 4 weeks after Spring semester's start	3 hours, 4 weeks prior to end of semester
<b>Objectives</b>	1. Describe the major social determinants of health and the causes of health disparities. 2. Gain self-awareness of how your world view affects your delivery of healthcare.	3. Describe how an interprofessional approach to health care contributes to improved health outcomes for populations and individuals.	4. Develop at least one interprofessional approach to reduce health disparities that would likely improve patient and population health.
<b>Assignments (due before session)</b>	Office of Minority Health modules [27] (discipline-based)		
<b>Content</b>	1. Ground rules and Active Listening activity (community building, self-awareness) 2. Culture definition (lecture) 3. Implicit Bias (lecture & activity) 4. Silent Beats (video) [37] & Guided questions (process) 5. World's Apart (video) & guided questions (process) 6. First memory of difference activity (self-awareness, process, community building) 7. Closure (trust, community building)	Unnatural Causes (video clips) [38]  Beads of privilege (self-awareness, dominant, non-dominant groups)	Mock city council presentations Closing video: TED Talk: Dangers of a Single Story [31]
<b>Format</b>	Dyads, small & large group discussions, individual reflection, process activities, community building activities, lecture bursts (short content lectures throughout session, ranging from 5-15 minutes at most), and simulated case scenarios were utilized.		

- Diverse participants should not be expected to speak on behalf of entire racial or ethnic groups.
- All people have experienced feeling different at some point during childhood.
- We must teach differently if we want different health outcomes-- otherwise we continue to perpetuate health disparities.
- Creating inclusive learning environments helps build trust and safety.

**Assignments:** The IHDS program involved dyads, group discussions, pre-assignments for self-reflection, interactive, multimedia activities, and very short, concise lectures. A brief overview of each session, the objectives, and the assignments are listed in Table 1.

### Student selection

The five professions have programs varied in length, but we were in agreement that first- year students often knew little about their own profession, and there would be greater gains through inclusion of second-fourth year students depending on the program (occupational therapy was 2 years, whereas podiatry was 4 years). Although in the acute care settings, nurses represent the largest workforce, we adopted a senate model of even representation of the five professions, and we decided that 25 students, five from each discipline would be an ideal size for piloting this course. Program directors nominated students for the program, who then chose whether they wanted to enroll. It was important to us that the students reflected the

diversity of our population, rather than the demographics of the health workforce. Many diversity courses in health sciences programs are focused on teaching predominantly white students about other cultures [28]; we wanted to ensure we provided a curriculum that was meaningful and relevant to all students. Of the 25 students enrolled, there were 3 first-year students (12%). Nine identified as male (36%), and four of the 25 students identified as white (16%).

To ensure an IPE experience, students were given assigned seating so that each table had each profession represented, other demographics such as gender, race, ethnicity were taken into consideration as well to achieve a balance of perspectives. Students sat with the same group for all three sessions so they could develop trust and rapport with each other and learn each other's names [29].

### Logistics

Time, space, and money were the initial identified logistical issues to overcome. Since all five disciplines had their own semester schedules and there was no university master schedule, carving out time for this optional series which would take place over 10 hours was a serious challenge [16]. After comparing schedules, three sessions over two semesters were scheduled with the duration of each session being approximately three hours. With student input, the professors determined that evening slots were preferable to weekend slots because students were already on campus during the weekdays but not on weekends as the university is a commuter school. Space was sufficient for the cohort of students especially during weekdays as classrooms

were easier to schedule in the evening rather than during prime daytime hours. We chose a “smart” classroom with round tables so that students were able to sit together as a group, facing each other, rather than faculty. Screens displaying videos and slides are on opposite walls, and students sit in rolling chairs which move in any direction. This type of layout visually removes the faculty as the “sage on stage” and replaces the faculty as a “guide on the side”, which is essential to a constructivist pedagogical approach.

## Evaluation

The IHDS program involved gathering pre- and post- surveys, session evaluations, over three sessions dispersed over the fall and spring semesters of the 2014-2015 academic year. A total of 25 students representing five health science disciplines voluntarily participated in this elective, optional pilot program. Participants were anonymous in the evaluations they completed as they were instructed to complete their pre- and post- surveys and session evaluations without their names on the documents. Before the series began, the students completed an online short course to become familiar with cultural competency terminology.

This evaluation (Figure 1) was submitted for human subjects review but was exempt because a full ethics approval was not required for the IHDS program evaluations.

## Results

This co-curricular series was offered over the course of one year, with an initial enrollment of 28 students from five health professions (nursing, occupational therapy, physical therapy, physician assistant, and podiatric medicine), and a final enrollment of 24 (3 students were unable to make the evening sessions work). All faculty were present for the entirety of the sessions, except for Session 1, when one faculty was unable to attend. Student evaluations were collected after each session; the same evaluation form was used for Session 1 & Session 3. The evaluation form (Figure 1) has 11 items, with five Likert-scale questions (from 0-4) for a total of 20 points, with question #5 specifically focused on patient-centered care through an IPE approach. The other items on the form are as follows: one self-assessment item related to the completion of assignments prior to the session; two true/false items related to increasing understanding of cultural issues in health care, and increased confidence in clinical practice; and three open-response items asking students to list three things learned, suggestions for improvement, and additional comments. Session 2 evaluations were through a written response to the prompt: “Name 3 lessons learned and why these stand out to you.” The mean for Session 1 evaluation (questions 1-5) was 17.6 ( $s=1.95$ ) from a possible total of 20 points, and the mean from Session 2 was 18.1 ( $s=1.68$ ). The mean for question #5 in Session 1 was 3.4 from a possible 4 points, and the mean for question #5 in Session 3 was 3.8 (Microsoft Excel 2016, Seattle, WA, USA).

Student evaluations of courses are a basic practice in universities and are considered to be an important measure of teaching effectiveness. Nevertheless, the quantifiable evaluation questions do not often capture learning; equally important are the written comments which accurately capture their experience of a course



## IPE Seminar EVALUATION

**WORKSHOP: IPE Seminar # 1**

**PRESENTERS:** Aara Amidi-Nouri, Beth Ching, Marjorie Hammer, Tomas Magana

**Date** October 30, 2014

**Time** 5-8:00 pm

Please answer each of the following in relation to your preparation for and/or experience in today's seminar, using categories:

4-Strongly Agree, 3-Agree, 2-Neither Agree nor Disagree, 1-Disagree, 0-Strongly Disagree, N/A-not applicable

	Strongly Agree		Neither		
	Agree	Disagree	Poor		
1. I have more awareness and/or knowledge about cultural issues in health care.	4	3	2	1	0
2. I am motivated to learn more about and/or apply cultural issues in health care.	4	3	2	1	0
3. The group and I were encouraged to participate.	4	3	2	1	0
4. The seminar contributed to my professional role development.	4	3	2	1	0
5. The seminar contributed to my ability to place the interests of patients & populations at the center of interprofessional healthcare delivery.	4	3	2	1	0
6. I completed the assigned preparation for the seminar (circle which applies): ALL MOST SOME NONE					
7. Use of clinical examples increases my understanding of cultural issues in health care. TRUE FALSE					
8. Use of clinical examples increases my confidence in my ability to intervene in a situation where cultural issues exist. TRUE FALSE					
9. List up to three things you learned from this seminar:					

**Figure 1:** Interprofessional Seminar Evaluation.

[30]. Themes that emerged from the written comments are in Table 2 [31].

## Discussion

The goal of this interprofessional health disparities series was to supplement the cultural competency education our health professions students are already receiving in their respective programs. The first two objectives seek to affect change at the student level in order for the student to become aware of implicit bias, social determinants of health, and the causation of health disparities. The desired outcome would be that the student will become a reflective, compassionate, culturally responsive health professional to deliver quality, evidence-based care for patients. The third objective seeks to affect change at the team level in order for the student to collaborate interprofessionally. The desired outcome would be that the student will appreciate the significance of roles, teamwork, confronting professional stereotypes and hierarchies to become a confident practitioner [32]. The final and fourth objective seeks to affect change at the patient and population level in order for the student to improve health outcomes for patients and populations. The desired outcome would be that each student aspires to dismantle the structural forces that are at the root of health disparities and advocate for health equity for all.

**Table 2:** Themes of the Interprofessional Reducing Health Disparities Program.

Themes	Explanations and Quotes
<b>Single stories and bias</b>	Learning about the difference between stereotypes and generalizations and triggers in the healthcare work environment that increase HCP reliance on stereotypes was eye-opening to many of the students, which was noted in almost all of the Session 1 evaluations. “Stereotypes are end points, they prevent vital communication to occur” ; “Under times of of stress or lack of time, our biases may increase”. Session 3 evaluations often referred to the TED Talk about the dangers of a single story [31] and the perpetuation of stereotypes leading to the following statements: “we all judge, how you use your judgment is what’s important”; “personal and historical context influence implicit bias”.
<b>Health disparities</b>	Students overwhelmingly commented on their surprise that health disparities existed even when other variables such as socioeconomic status, access, and education were controlled for. The comments were “minority groups are treated with lower quality of care”; “as healthcare providers we must be vigilant in recognizing health disparities”. Many students mentioned the statistics learned in the sessions related to health disparities, with the maternal health and infant mortality rates being mentioned the most. “The system can fail those it is meant to treat”; “the video helps me understand the narrative of the patient, and that we should try to understand the context” were the comments that ensued.
<b>Self-awareness</b>	Students commented on activities related to raising their self-awareness: “self-reflection is important so you are aware of what you bring to the table” “The way we think of ourselves impacts our worldview” “listen”
<b>Memory of difference</b>	“culture and difference affect and shape us from an early age” “the first memory [of difference] is usually one that is painful and one that occurs early in life, it helps shape us in life”
<b>Beads of privilege</b>	“privilege can be empowering and bring awareness to future practice” “our privileges impact our interaction with our patients”
<b>Reduction of health disparities</b>	The sessions included learning about causes of health disparities and synthesizing concepts to identify how healthcare providers can actively reduce health disparities. Many students’ comments reflected a focus on the theme of reducing and eliminating disparities. “Understanding our history, privilege, and how to communicate with other professions...will help do your part in reducing disparities”; “deep issues exist in our community (transportation, gentrification, school closure) that need our healthcare providers’ attention and solutions”. The following comments concluded that “we need to be aware of the harsh realities our communities face”; “Don’t assume: ask”; “Not us/them, <u>we</u> ”.
<b>IPE communication</b>	Inteprofessional groupings were a key structure of the course, and this element shone through in the comments as well. “We need to be aware of other professions and how to communicate with them”; “being aware of strengths we bring to clinic and those that others have”; “interdisciplinary team work, not listen to a ‘single story’”. “ <u>INTER</u> professional”; “collaborate together as a team on proposing a solution, or organizing a proposal”; “collaboration leads to creative solutions” were lessons learned.

In-class discussions and course evaluations highlight how students explored attitudes that perpetuate health disparities and their role in reducing health disparities in this course. The highly interactive nature of this course enabled students to learn from each other in small groups where each profession was represented. Interestingly, there were no comments related to redundancy of content learned in our series relative to their programs, suggesting that although programs are meeting accreditation requirements related to cultural competency, these standards are insufficient in addressing the root causes of health disparities, and the active role future healthcare providers must take in changing the health system to reduce health disparities. Merely meeting these standards may lull educators into feeling confident that they have taught all that is expected related to cultural competency. An unintended consequence is that there is minimal attention given to the attitudes that perpetuate health disparities. The personal growth required of both faculty and students to effectively reduce health disparities-- the focus remains on knowledge and skill acquisition. Our students were eager to self-reflect, examine their biases and privileges, and to collaborate with each other to offer solutions. One student wrote a comment that this course should be mandatory for all students.

The descriptive statistics offer important insights into how students perceived the course, though statistical significance and generalizability cannot be inferred based on the sample size. The students enrolled in this course had at minimum completed the first year of their program, and as a result already had interdisciplinary experiences in the clinical setting, which explains in part a relatively high score in Session 1 evaluations on question #5. However, the scores rose closer to 4.0 on that question by the end of Session 3, suggesting that students' interprofessional communication and understanding of each other's professions increased after the Session 3 simulation. Many IPE simulations are targeted at specific patient scenarios, so our course sought to supplement these experiences by taking a wider community perspective specifically related to four social determinants of health currently relevant to our community: transportation, food access, gentrification, and school closures. In Session 3, students were grouped interprofessionally and assigned to one of the four scenarios. As a team, they developed a solution to the issue described in the scenario and presented a proposal to a mock city council including a specific funding request. The mock city council members then deliberated using a rubric to assess the proposals, and funded the proposal they thought would be most effective. The students enjoyed this experience as it was very different from their regular program experiences-- it enabled them to problem-solve policy issues interprofessionally. The majority of the comments related to interprofessional communication were evident in Session 3 evaluations, and this may explain why question #5 scores increased from Session 1 scores.

There is a mandate to offer such courses for all students and to find ways to thread these concepts throughout the curriculum [33]. This is an absolutely necessary foundation; however, not all students have the same starting point.

Many students enter the health field with the intent of improving care and access. The resistance to the teaching of racial inequities brings up defensiveness in both faculty and students which stifle attempts to change attitudes and continues the trend of staying in the more comfortable zone of knowledge and skills. In our course, we adopted Gladwell's Tipping Point Model [34], bringing in early adopters (i.e., students who self-select) empowering them as change agents, and knowing that eventually the "laggards" will be swept up in the movement. This enthusiasm from the students was evident in the numerous additional comments such as "keep it going", "Thank you for this wonderful opportunity" "I learned so much". By institutionally supporting both faculty and students who want to be involved in this work, and creating faculty pipelines so our graduates can return to teach at our universities, we move that much closer to a tipping point, where discussions of race, racism, bias, and elimination of health disparities can become an integral part of all our curricula.

### Implications for practice

Measurement of change and growth of attitudes in healthcare providers remains a challenge, and there is a reliance on self-report measures to determine effectiveness of interventions. As faculty, grades are not assigned to students based on self-report measures, but rather on measurable assignments and examinations. Our course included assignments and reflective writing so that faculty could assess students' learning throughout our series. Many universities offer a variety of workshops and courses related to health disparities; the impact of stand-alone workshops without assignments is difficult to gauge. The literature clearly indicates a need for longitudinal data to measure how such initiatives change the delivery of care to patients. Such challenges can be mitigated by offering supplemental co-curricular education as courses, and offering workshops in a series model such as ours, where faculty can observe and measure growth over time in students. Elimination of health disparities will be clear when quality indicators of health reveal no differences based on race and ethnicity. Our current evidence demonstrates that we are not effectively narrowing disparities; thus, educators must continue to innovate and boldly tackle the challenges of addressing attitudes in our curricula; we cannot wait for our accreditation standards to dictate what must be done and how it needs to be done.

Faculty spent much time developing the course with meetings spanning six months prior to Session 1. Each of us holds a passion for reducing health disparities; however, such expectations of faculty can be unrealistic and unsustainable over time. We recommend that universities underscore the importance of this work through provision of release time for faculty or the inclusion of such elective courses in a similar manner as required courses.

Our course was limited by several factors. The participants self-selected into this optional, elective course, and faculty were appointed by departments based on their expressed interest and content expertise. Given that this was an elective course, the only timeframe when all students could meet was

in the evening, which limited who was able to enroll in the course. Students were only tracked for the year they were enrolled in the course; the longitudinal impact is unknown. Although we did aim to have faculty of our series reflect all the health professions of our enrolled students, and had one faculty who is a physician (MD), we did not have faculty specifically from podiatric medicine represented. The evaluations from the podiatry students in the course did not mention the lack of a podiatry faculty, presumably the inclusion of a physician may have been sufficient to those students. Of the five faculty, one faculty was male, which is also a reflection of our student population that is 76% female [25]. We were able to attract students from five health science majors at our university; this may not be the case at other academic institutions.

### Future directions

We have answered the call to action regarding how health professionals can actively reduce health disparities by developing an interprofessional health disparities series program. This mandate is not an easily-accomplished charge—there are many challenges and barriers to the development of such a program. Rather than focusing on the current model of cultural competency as a way to contain and reduce the needs of a patient to customs and communication styles, why not think more broadly to “let the dam break,” in order to create tides of change to confront health disparities with a free-flow of access and power to good health outcomes for that patient?

We envision empowered students who will become health providers and early adopters [35] of interventions, programs, and services to reduce health disparities for patients, communities, and populations. To be able to break those strong, traditional models, pipeline programs must capture underserved, pre-professional students to form forceful currents of health providers of color. Statistics demonstrate that health providers of color tend to be committed to serve the communities from which they come [36-38]. Racially diversifying the health professional workforce is integral to improving health outcomes for people of color.

### Conclusion

We hope that our pilot IHDS provides a practical model to interprofessionally reduce health disparities. Our IHDS purposely does not require use of a simulation center or other extensive high technology as our aim was to break some of the barriers in the curricular development of the program. Our hope is that the IHDS model is a replicable approach in the creation of a “knowledge epidemic” tide. We strongly encourage our colleagues to be part of the flow.

### Acknowledgments

The authors would like to gratefully acknowledge their colleagues Tomás A. Magaña, MD, Lead Physician, La Clínica de La Raza, Inc.; Medical Director, Assistant

Professor, Master Physician Assistant Department, Marjorie Hammer, MSN, Assistant Professor, School of Nursing, and Susan Grieve, DPT, Assistant Professor, Physical Therapy Department, who developed and facilitated the Interprofessional Health Disparities Series along with the authors. In addition, the authors would like to acknowledge Michael Negrete, PharmD, Assistant Academic Vice President, for his unwavering support financially, materially, and technically for this project. This educational innovation is possible because of the commitment to developing leaders to advance health care by the Office of Academic Affairs. A heartfelt thanks to the former students who took a leap of faith to participate in this pilot program. Your willingness to be trailblazers is much appreciated and is a benefit to current and future students.

### References

1. Healthy People (2020) U.S. Department of Health and Human Services.
2. Rockville MD (2016) National Healthcare Quality and Disparities Report. *Agency for Healthcare Research and Quality*.
3. World Health Organization (2014) Review of social determinants and the health divide in the WHO European region: Final report. Copenhagen, Denmark.
4. World Health Organization (2008) Closing the gap in a generation. Health equity through action on the social determinants of health: Final report. WHO Commission on Social Determinants of Health, Geneva, Switzerland.
5. World Health Organization (2013) A universal truth: No health without a workforce. Geneva, Switzerland.
6. Rozendo CA, Salas AS, Cameron B (2016) A critical review of social and health inequalities in the nursing curriculum. *J Nurs Educ*. 50:62-71.
7. Hasnain M, Massengale L, Dykens A, Figueroa E (2014) Health disparities training in residency programs in the United States. *Fam Med* 46:186-191.
8. Art B, DeRoo L, De Maeseneer J (2007) Towards unity for health utilizing community-oriented primary care in education and practice. *Health Educ J* 20:74.
9. Bainbridge L, Grossman S, Dharamsi S, Porter J, Wood V (2014) Engagement studios: Students and communities working to address the determinants of health. *Health Educ J* 27:78-82.
10. Mihalynuk TV, Soule Odegard P, Kang R, Kedzierski M, Johnson Crowley N (2007) Partnering to enhance interprofessional service-learning innovations and addictions recovery. *Health Educ J* 20:92.
11. Solar O, Irwin A (2010) A conceptual framework for action on the social determinants of health. Social determinants of health discussion paper 2 (policy and practice), WHO, Geneva, Switzerland.
12. Buring SM, Bhusan A, Broeseker A, Conway S, Duncan-Hewitt W, et al. (2009) Interprofessional education:

- Definitions, student competencies, and guidelines for implementation. *Am J Pharm Educ* 73:59.
13. Greiner AC, Knebel E (2003) Health professions education: A bridge to quality. Institute of Medicine (IOM) Committee on the Health Professions Education Summit. *National Academy Press* Washington, DC.
  14. Olsen R, Bialocerkowski A (2014) Interprofessional education in allied health: A systematic review. *Med Educ* 48:236-246.
  15. Hasnain M, Massengale L, Dykens A, Figueroa E (2014) Health disparities training in residency programs in the United States. *Fam Med* 46:186-191.
  16. Elias TI, Williams KR, Hershey TB, Documet PI, Barinas-Mitchell E, et al. (2017) The health equity certificate program: A targeted approach to reducing health disparities and increasing the competence of health professional students. *Pedagogy in Health Promotion* 3:187-194.
  17. Mitchell JA (2012) Integrating education on addressing health disparities into graduate social work curriculum. *Journal of Teaching in Social Work* 32:471-486.
  18. Thistlewaite J, Moran M (2010) Learning outcomes for interprofessional education (IPE): Literature review and synthesis. *J Interprof Care* 24:503-513.
  19. Sleeter CE (2001) Preparing teachers for culturally diverse schools: Research and the overwhelming presence of whiteness. *J Teach Educ* 52:94.
  20. Sears KP (2012) Improving cultural competence education and the utility of an intersectional framework. *Med Educ* 46:545-551.
  21. American College of Physicians (2007) Recommendations for teaching about racial and ethnic disparities in health and health care. *Ann Intern Med* 141:815-817.
  22. Murray-García JL, Harrell S, García JA, Gizzi E (2014) Dialogue as skill: Training a health professions workforce that can talk about race and racism. *Am J Orthopsychiatry* 84:590-596.
  23. Nyika L, Murray-Orr A (2017) Critical race theory-social constructivist bricolage: A health-promoting schools research methodology. *Health Educ* 76:432-441.
  24. Sanderson B, Brewer M (2017) What do we know about student resilience in health professional education? A scoping review of the literature. *Nurse Educ Today* 58:65-71.
  25. <http://www.samuelmerritt.edu>
  26. Hassouneh D, Lutz KF (2013) Having influence: Faculty of color having influence in schools of nursing. *Nurs Outlook* 61:153-163.
  27. U.S. Department of Health and Human Services Office of Minority Health (2018) Culturally competent nursing care: A cornerstone of caring.
  28. Association for the Study of Higher Education (2015) The educational benefits of diversity: Who gains?. *ASHE J High Educ* 41:39-56.
  29. Glenz T (2014) The importance of learning students' names. *Journal on Best Teaching Practices*.
  30. Stark P, Freishat R (2014) An evaluation of course evaluations. *Science Open Research*.
  31. Adichie C (2009) The dangers of a single story. TED, London.
  32. Bagatell N, Broggi M (2014) Occupational therapy and physical therapy students' perceptions of a short-term interprofessional education module. *Education Special Interest Section Quarterly* 24:1-4.
  33. Bridges DR, Davidson RA, Soule Odegard P, Maki IV, Tomkowiak J (2011) Interprofessional collaboration: Three best practice models of interprofessional education. *J Med Educ*.
  34. Gladwell M (2000) *The Tipping Point: How Little Things Can Make a Big Difference*. Little, Brown & Co., Boston, MA.
  35. Rogers EM (1995) *Diffusion of Innovation*. Free Press, New York.
  36. Walker KO, Moreno G, Grumbach K (2012) The association among specialty, race, ethnicity, and practice location among California physicians in diverse specialties. *J Natl Med Assoc* 104:46-52.
  37. Adelman L (2007) *Unnatural causes: Is inequality making us sick*. Centers for Disease Control and Prevention.
  38. Grainger-Monsen M, Haslett J (2004) *Worlds apart: A four-part series on cross-cultural health care*.
- ADDRESS OF CORRESPONDENCE:** Elizabeth Ching, OTD, Assistant Professor, Occupational Therapy Department, Samuel Merritt University, Oakland, California, United States, Tel: 510-879-9200 Extension: 7386; FAX: (510) 457-4008; E-mail: [bching@samuelmerritt.edu](mailto:bching@samuelmerritt.edu)
- Submitted: May 22, 2019; Accepted: July 05, 2019; Published: July 12, 2019*