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## Prioritizing health disparities in medical education to improve care

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### Abstract

Despite yearly advances in life-saving and preventive medicine, as well as strategic approaches by governmental and social agencies and groups, significant disparities remain in health, health quality, and access to health care within the United States. The determinants of these disparities include baseline health status, race and ethnicity, culture, gender identity and expression, socioeconomic status, region or geography, sexual orientation, and age. In order to renew the commitment of the medical community to address health disparities, particularly at the medical school level, we must remind ourselves of the roles of doctors and medical schools as the gatekeepers and the value setters for medicine. Within those roles are responsibilities toward the social mission of working to eliminate health disparities. This effort will require partnerships with communities as well as with academic centers to actively develop and to implement diversity and inclusion strategies. Besides improving the diversity of trainees in the pipeline, access to health care can be improved, and awareness can be raised regarding population-based health inequalities.

### Keywords

health disparities; social determinants; diversity; cross-cultural education

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#### Conflicts of interest

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## Introduction

Individual Americans—subject to a large number of social, cultural, economic, or geographical factors influencing their health—may find themselves in vastly different situations with regard to health outcomes and health care. For example, according to a 2011 U.S. Department of Health and Human Services report,<sup>1</sup> the percentage of Americans with two or more chronic health conditions correlates strongly with poverty level, and this correlation is growing. While income inequities are responsible for much of the health disparities in the United States, there are many other factors, of which only some can be readily explained. An African American child is more likely to develop asthma than a white child within the same income bracket. While obesity does not show much correlation with the highest education obtained by an individual, childhood obesity is strongly correlated with the highest education obtained by the head of the household. At any income level, Hispanic and Asian Americans are less likely to have health insurance than African Americans or non-Hispanic whites. The distribution of doctors across the United States is far from uniform: whereas there are 40 doctors for every 10,000 people in Massachusetts, there are 17 in Idaho.

The conference “Prioritizing Health Disparities in Medical Education to Improve Care”, held on October 2, 2012, convened medical school faculty and administrators, educators, and students to discuss how to create real solutions at the level of medical schools. In his introductory remarks, Fitzhugh Mullan (the George Washington University) recounted the roots of the struggle against health disparities during the civil rights movement of the 1960s, and how academic study of health disparity finally attained legitimacy with the publication of the Institute of Medicine’s 2003 report *Unequal Treatment: Confronting Racial and Ethnic Disparities in Health Care*.<sup>2</sup>

Medical schools have long operated on the bases of research, education, and patient care. Each of these pillars suggests an ethical imperative for universities to actively pursue the social mission of disparities reduction. According to Mullan, this social mission would include mainstreaming diversity, assessing graduates’ goals and career development (with an eye toward underserved communities), advancing access to care, and raising awareness of health disparities. Two distinct but complementary tactics were highlighted by numerous speakers: a process of increasing communication, outreach, and, ultimately, aligning the needs of the community with the resources of the university; and new initiatives not only to increase the numbers of underrepresented minorities entering medical education, but also to encourage those that have to stay within academic spheres of medicine.

## Social determinants of health

### Linking university health resources to social determinants in the community

Arthur Kaufman (University of New Mexico (UNM)) discussed means of linking university health resources to the social factors contributing to health and disease, using the example of active programs at the UNM. In the United States, health services consume over 90% of the nation’s healthcare budget but contribute no more than 10–15% to the nation’s health. In New Mexico, this disparity between health expenditure and health outcome can be

illustrated through the mortality from diabetes among the different populations in the state. Native Americans receive some of the best screening and treatment for diabetes from the Indian Health Service and special programs targeting Native Americans with diabetes. Yet, Native Americans have the highest death rates from that disease. The high-quality care they receive cannot compensate for decades of chronic poverty, high unemployment, poor educational attainment, unhealthy food options, poor housing, and a fragmented social network—the social determinants of health and disease.

Universities can play a major role in addressing social determinants through education and clinical service. At the UNM, all medical students graduate with a Public Health Certificate, which awards 17 transferrable credits toward an MPH degree.<sup>3</sup> Kaufman emphasized that students not only learn about the importance of the social determinants, but also gain frontline experiences and skills in how to address them. And the UNM's investment in educating family medicine residents in rural and underserved communities, with its high rate of subsequent recruitment to those communities,<sup>4</sup> leads not only to better access to health service but also to a positive local economic impact. Each physician practicing in a rural community hires on the average 18 people directly and indirectly and generates approximately \$1 million in business each year.

The UNM's Health Extension Rural Offices (HEROs) serve as a model for addressing social determinants. It is adapted from the U.S. Department of Agriculture's Cooperative Extension Service, which links resources from each state's land grant university to the needs of farmers and farm families.<sup>5</sup> HERO agents are recruited from and work in rural and urban underserved communities across the state. They link community health priorities with UNM resources and monitor the effectiveness of university programs in addressing community needs. Examples of their work include the recruitment of community preceptors of health science students, the writing of a grant to establish a federally qualified health center in a rural community with insufficient access for the uninsured, and the creation of a telepharmacy service for a frontier community that had lost its pharmacist.

The research agenda of the University of New Mexico has been influenced by the advent of HEROs and the recognition of social determinants. Where the Health Science Center's signature research programs responded to major NIH funding sources (cancer, cardiovascular and metabolic diseases, brain, and behavior), New Mexico's county health planning councils had a different set of health priorities (substance abuse, teen pregnancy, obesity, access to care, violence, and diabetes). Each HERO agent plays a role in linking community health questions to the research resources of the university.

HEROs further address social determinants by amplifying the impact of health systems in rural and underserved communities through the recruitment and training of community health workers (CHWs). CHWs are community residents who are culturally and linguistically competent and who, more than any other member of the health team, work with patients in addressing the social determinants of health. They improve patients' health literacy, help them navigate the health system, facilitate doctor visits, and assist in applying for financial assistance, obtaining food vouchers, and filling out housing applications. The impact of CHWs on the health team led to two Medicaid managed care companies in New

Mexico employing them to improve access to primary care and reduce preventable emergency room visits, hospitalizations, and overuse of medications.<sup>6</sup>

Finally, to mobilize the support of all components of the Health Sciences Center toward the common purpose of institutional responsibility for community health, the institution leaders adopted a new vision, which states, “The University of New Mexico Health Sciences Center will work with Community Partners to help New Mexico make more progress in health and health equity than any other state by 2020.” This vision cannot be achieved without institutional focus in all its mission areas on the underlying social determinants of health.

### **Health disparities and social justice: a call to action for academic health centers**

A society’s greatness is defined by how it treats its most vulnerable members. By this metric, Claire Pomeroy (University of California, Davis) argued, the United States has failed to achieve greatness. Indeed, Pomeroy stated, our country lacks one of the most basic components of justice that everyone deserves—health care and other services that enable each of us to live the healthiest life possible. She emphasized that now is the time for academic health centers to fully leverage their unique position at the intersection of education, research, and clinical care to lead action that advances the nation’s health and well-being.

Despite the fact that the United States spends about twice as much per capita as other developed nations and nearly 18 percent of its gross domestic product (GDP) on health care, U.S. health outcomes are poor. Compared to 34 Organisation for Economic Co-operation and Development (OECD) countries, the United States ranks only 29th for men and 28th for women in life expectancy, and 31st in infant mortality.<sup>7</sup> Moreover, health outcomes in the United States are disproportionately distributed, with significant health disparities relative to race, ethnicity, socioeconomic status, education, immigration status, sexual orientation, and geography.

For example, Hispanics are twice as likely as non-Hispanic whites to report poor or fair health status.<sup>8</sup> People with less than a high school education are more than four times as likely as those with a college degree to report poor or fair health.<sup>9</sup> Adults living below the federal poverty level are more than four times as likely as those with incomes greater than 400 percent of the poverty level to indicate that they are in poor health.<sup>10</sup> Indeed, in the United States, the top half of male earners live 5.4 years longer than the bottom half.<sup>11</sup>

Recent healthcare reform measures extend insurance coverage to much, though not all, of the nation’s uninsured population. Unfortunately, insurance reform alone cannot effectively reduce health disparities and improve the country’s health status. The United States must transform its approach to health care: from a “sick care” system to one that focuses on prevention and wellness, from a hospital-based system to one in which primary care is central, and from fragmented service episodes to a true continuum of care across the life span.<sup>12</sup>

To accomplish this transformation, the current system in which medical care is isolated from other social services must be fundamentally changed. The nation must embrace a new

approach that addresses the upstream social determinants that drive health status. Clinical care delivery is responsible for only about 10% of premature mortality and health status (Fig. 1). Other determinants of health are more powerful, including genetics, behaviors, and social circumstances, such as education, income, housing, job security, transportation, safe neighborhoods, and access to nutritious foods.

Pomeroy argued that the concern that the country cannot afford the cost of addressing social determinants of health is ill-founded. The solution is not more money; instead, it is spending money on the right things at the right times. She stressed that at national and local levels, healthcare funds should be directed upstream toward social services to promote wellness and prevent disease, rather than downstream after disease develops.

As shown in Figure 2, the United States spends twice as much of its GDP on health care as other OECD countries, yet the total spent on health services plus social services (which can address the social determinants of health) is comparable to other countries.<sup>13</sup>

Successful examples of the upstream approach on the local level include healthcare systems that have instituted programs to provide housing for homeless patients who are ready for hospital discharge. Results demonstrate dramatic cost savings to the overall healthcare system, although not always to the organization bearing direct costs.<sup>14</sup>

Social determinants of health receive limited attention in current healthcare reform initiatives.<sup>15</sup> However, there is increasing awareness of the need to broaden the perspective to focus on health, rather than just health care. For example, the Association of Academic Health Centers recently adopted a resolution calling on its members to address social determinants of health.<sup>16</sup>

At the University of California (UC), Davis, Health System, model programs are in place that emphasize health disparities and social determinants in the mission areas of education, clinical care, and research, including:

- Education:
  - Rural-PRIME (programs in medical education) and San Joaquin Valley-PRIME prepare selected students to practice in rural communities, and TEACH-MS (Transforming Education and Community Health for Medical Students) programs train students and residents who are committed to careers in underserved urban areas.
  - Social determinants in the community are addressed through multiple outreach programs, including English and Spanish versions of mini-medical schools for seniors to support healthy aging.
- Clinical care:
  - UC Davis physicians work to overcome geographic disparities by providing consultations via telemedicine at more than 100 sites throughout California; they also helped to launch the California Telehealth Network, which links more than 800 sites across the state, including 12 e-health communities.

- Electronic health records and personal health records for UC Davis patients include data on race, ethnicity, and primary language, and soon will include sexual orientation and gender identity.
- Research:
  - The UC Davis Center for Reducing Health Disparities leverages a multidisciplinary approach to studying the causes of health disparities and advances solutions that help address underlying social determinants.
  - The UC Davis Center for Population Health Improvement develops, applies, and disseminates knowledge about social determinants to improve health, health security, and health equity.
  - At the UC Davis Comprehensive Cancer Center, the Mothers' Wisdom Breast Health project has increased mammogram screening among American Indian and native-Alaskan women, and the National Center for Reducing Asian American Cancer Health Disparities has increased hepatitis testing and vaccination rates in at-risk communities.

There is a present need to address health disparities and focus on social determinants of health. Health professionals must be trained with the skills to excel in this new paradigm,<sup>17</sup> including working as interprofessional teams and in nontraditional venues of care, using innovative technologies, incorporating the science of systems care, advancing cultural competency, and embracing the social determinants of health. This new direction requires the collaborative support of academia, community leaders, and the public; health professionals cannot and should not move forward in isolation.

Pomeroy urged that all sectors of society must come together to create comprehensive and sustainable solutions. The causes of poor health and the solutions to improve health are multifaceted and interconnected. Integrated solutions that reflect a "health in all policies" approach are critical.<sup>18</sup> From business leaders to engineers, policy makers, social service experts, and more, the country must transcend traditional boundaries.<sup>19</sup> Collaboration opens doors to new perspectives, different questions and better answers. Together, Pomeroy declared, we will be able to make smarter policy decisions, create programs that focus on underlying social determinants of health, and improve health for all.

## **Culturally competent education**

### **Improving quality and achieving equity through cross-cultural education**

Joseph R. Betancourt (Massachusetts General Hospital, Harvard Medical School) discussed the importance of improving cross-cultural education among healthcare providers. The goal of cross-cultural education is to improve the ability of healthcare providers to communicate effectively and provide quality health care to patients from diverse sociocultural backgrounds. This field has emerged for two very practical reasons. First, the United States is becoming more diverse. As such, healthcare providers will increasingly see patients who may present their symptoms in different ways, who may have different thresholds for seeking care, and who may express different health beliefs that influence adherence. Second,

research has demonstrated that sociocultural differences between patient and provider influence communication and clinical decision making, and are especially pertinent given the evidence that links provider–patient communication to patient satisfaction, adherence, and subsequently, health outcomes.<sup>20</sup> Thus, when sociocultural differences between patient and provider are not managed effectively in the medical encounter, patient dissatisfaction, poor adherence, poorer health outcomes, and lower quality care may result.<sup>21</sup>

The Institute of Medicine report *Unequal Treatment* highlighted the importance of cross-cultural communication—and recommended cross-cultural medical education—as a means of eliminating racial/ethnic disparities in health care.<sup>20</sup> Disparities can result from poor communication between providers and minority patients, minority patient mistrust, and stereotyping of minority patients by providers. In fact, a recent meta-analysis conducted by the Agency for Healthcare Research and Quality, consisting of a systemic review of 91 articles that measured the impact of cultural competence training on the quality of care provided to minority patients, found that this training yielded improvement in provider knowledge, attitudes, and skills in this area, as well as improvements in patient satisfaction.<sup>21</sup>

In order to assess how prepared health professional trainees feel they are to care for diverse populations, a national survey was conducted with more than 2000 residents in their last year of training in seven specialties (medicine, surgery, pediatrics, obstetrics and gynecology, psychiatry, emergency medicine, and family medicine).<sup>22</sup> Nearly all residents indicated that it was important to consider the patient’s culture when providing care, and many residents indicated that cross-cultural issues often resulted in negative consequences for clinical care, including longer office visits, patient noncompliance, delays in obtaining consent, unnecessary tests, and lower quality of care. Interestingly, approximately one in five residents indicated that they possessed low skills in this area. When compared to residents who had reported receiving a lot of cross-cultural education, those who reported receiving little or none were 8–20 times more likely to report low skill levels in a variety of key areas essential to the care of diverse populations.

Betancourt summarized by stressing that culture matters in clinical care, being inattentive to culture has significant quality implications, and those who receive cross-cultural education feel more prepared to handle these challenges. Despite this, limited time in the clinical encounter remains the largest barrier to implementation of cross-cultural skills when present. Betancourt stressed that his experience teaching cross-cultural communication to medical students, residents, and practicing clinicians taught him that providers want to do the right thing; however, they do not want to be lectured or told that they are culturally incompetent and need to be fixed. Furthermore, medical students and physicians often want just the basic facts about culture and often view cultural competence as something that increases visit time rather than a skill set, and as a soft science without an evidence base. Therefore, Betancourt argued, cross-cultural competence needs to be framed as a skill set—similar to a review of systems, or checklist—that can help providers manage challenging cross-cultural cases. It must be seen as practical, actionable, and time efficient; it needs to be taught in a case-based fashion that creates clinical challenges; it must be linked to evidence-based guidelines and the peer-reviewed literature; and it must leave learners with a concrete set of tools and skills.

To meet this need, Betancourt and colleagues developed a portfolio of cross-cultural communication e-learning programs entitled Quality Interactions.<sup>23</sup> Since 2003, approximately 125,000 healthcare professionals have completed one of these programs (including about 1000 doctors at Massachusetts General Hospital in the span of three months in 2009). Built on 15 years of research and educational experiences, Quality Interactions teaches a patient-based approach to cross-cultural care.<sup>24</sup> This approach is based on the premise that every individual patient presents a sociocultural perspective that must be explored and managed on an as-needed basis through a set of questions, inquiries, and negotiation strategies. Betancourt argued that e-learning is a powerful and effective tool for cross-cultural education at all levels. It allows for extensive training of a large group of learners in a short amount of time with a set of uniform skills. The Quality Interactions program has demonstrated that e-learning needs to be case based, interactive, and capable of creating teachable moments; it must provide personalized feedback; and it should be longitudinal (with boosters) and present the option for blended learning (classroom teaching as a supplement). E-learning programs need to be realistic, easy to maneuver, linked to evidence-based guidelines and the peer-reviewed literature, and to provide skills to more effectively communicate with all patients.

In conclusion, the field of cross-cultural education is growing rapidly. We must be prepared to meet the needs of an increasingly diverse population by creating a skilled healthcare workforce that can deliver effective, high-quality care. Although healthcare providers may be somewhat resistant to cross-cultural education, this can be overcome by messaging the importance of this work and its link to quality of care. In the setting of faculty, time, and financial resources, e-learning provides an excellent mechanism for extensive, high-quality cross-cultural education for medical students, residents, and practicing clinicians.

### **Educating students to deliver comprehensive LGBT care**

Lesbian, gay, bisexual, and transgender (LGBT) populations, which represent approximately 7% of the United States' population, are increasingly recognized as groups with documented health and healthcare disparities. Mitchell R. Lunn, (Brigham and Women's Hospital, Harvard Medical School) discussed inequities, including barriers to accessing health care and increased risk of certain chronic diseases, as well as unique physical and mental health challenges related to sexual orientation and gender identity.<sup>25</sup> In 2007, the Association of American Medical Colleges (AAMC) recommended that medical schools "ensure that students master the knowledge, attitudes, and skills necessary to provide excellent, comprehensive care for [LGBT] patients."<sup>26</sup> Despite these recommendations, most LGBT patients believe providers are not prepared to care for them.<sup>27</sup> Prior LGBT-related medical education studies, while limited in scope, highlighted the evolution of the medical community and society; gay and lesbian studies were initially conducted within psychiatry and later within family medicine. These studies highlighted the importance of gay and lesbian student groups in medical education and showed that increased clinical exposure to LGBT patients correlated with greater LGBT health knowledge and skills as well as more positive attitudes toward LGBT patients.

Lunn presented the findings from a 2011 national survey study of deans of medical education, with a 75% response rate, that provided a contemporary, comprehensive estimate of LGBT-related medical education.<sup>28</sup> The median number of hours dedicated to teaching LGBT-related content in the required medical school curriculum was five. More than one-third of respondents reported zero hours during the clinical years. While most institutions cover sexual orientation, gender identity, and HIV, the least-taught topics included those related to primary care (e.g., substance abuse, chronic disease risk, body image) and transgender people (e.g., transitioning, sex reassignment surgery). Overall, most deans had a negative opinion about the amount and quality of the coverage of LGBT content at their institutions. In order for improvement, they noted a need for more LGBT health curricular materials and faculty willing to teach the content.

Given that the teaching of these topics is often limited to a select few interested faculty members, developing new curricula for LGBT health can be a daunting task (Table 1). Lunn emphasized the importance of using lectures, cases, simulations, and observed structured clinical encounters (OSCEs) designed by others until LGBT health competencies broadly influence curricular development. Several national LGBT health-focused organizations—including the Gay and Lesbian Medical Association ([www.glma.org](http://www.glma.org)) and the Fenway Institute ([www.thefenwayinstitute.org](http://www.thefenwayinstitute.org))—have developed curricular materials on LGBT health. Additional national repositories, like the AAMC's MedEdPORTAL ([www.mededportal.org](http://www.mededportal.org)), allow educators to submit their curricula for peer review and facilitate the exchange of teaching resources throughout undergraduate and graduate medical education.

In addition to didactic and experiential learning, improving LGBT medical education requires increased awareness and personnel development (Table 1).<sup>29</sup> Developing the students and faculty who will improve LGBT health disparities by research and teaching requires an institutional commitment to diversity. Targeted student and faculty recruitment, mentorship programs, and defined pathways for faculty promotion may help establish a culture that accepts health disparities research as scholarship while creating a welcoming learning environment. LGBT-specific efforts (e.g., Out List, LGBT center, rainbow sticker campaign, support for civil marriage equality) at institutions across the country not only promote the visibility of LGBT people but also normalize sexual orientation and gender identity disclosure. By creating diverse educational environments with persons needed to drive change, LGBT-related medical education will improve and, as a result, so will the care of LGBT people.

## Changing curricula

### Addressing health disparities through molecular epidemiology

At its current rate of growth, the racial and ethnic composition of the U.S. population will continue a dynamic shift toward increasing diversity. Over the past two decades, while significant advances in medical, diagnostic, and therapeutic innovations have been made in key areas, such as infectious disease, cardiovascular health, and oncology, significant inequities remain in health outcomes according to factors such as race and ethnicity, sexual and gender orientation, income, and education. The social environment in which individuals

live, as well as their lifestyles and behaviors, can influence the incidence of illness in populations.<sup>30</sup> At no time has this been more evident than in the current climate of recognized health disparities, lack of health insurance, and economic instability. Having an understanding of these inequities and being equipped to address modifiable determinants of health disparities provides the physician-in-training with the necessary foundation to effectively practice medicine in the 21st century and to address important public health needs. Thus, the training of the modern physician must weave the development of traditional skills such as communication and physical examination with the cost-effective use of novel biomolecular information in complex systems to deliver culturally competent care. The promise of this training is the development of individuals who are at the forefront of using translational medicine to address disparities in health.

Fritz Francois (New York University School of Medicine (NYUSoM)) discussed the introduction, in 2010, of a patient-centered curriculum for the 21st century (C21 at NYUSoM) with exemplars of disease or pillars that span from the preclinical period (shortened to 18 months) to the clinical years. Colorectal cancer serves as an example of a cancer biology pillar that provides students with the opportunity to connect information from the classroom, the bench, and the bedside, as they learn anatomy, histology, pathology, and epidemiology, among other subjects, while considering both modifiable as well as nonmodifiable determinants of disease development. Through case scenarios, students are challenged with specific tasks such as counseling a patient about colon cancer screening where both patient<sup>31</sup> and physician barriers<sup>32</sup> need to be considered. The student engages in team-based decision-making exercises that incorporate issues in population health and health disparities, while using biomolecular evidence to better understand possible causes for the clinical scenario as well as to consider the costs and benefits of possible solutions. The students are provided with new educational opportunities as well as student-centered curricular pathways, such as concentrations that allow focus in a specific area as they explore the determinants of disease.

One such curricular pathway, implemented at NYUSoM in the fall of 2012, is the Health Disparities Concentration (HDC). It was created to provide a forum for learning about determinants of health disparities and for developing skills that help promote health equity through clinical practice and scholarly work. Consistent with the 2011 U.S. Centers for Disease Control and Prevention (CDC) Health Disparities and Inequalities Report (<http://www.cdc.gov/minorityhealth/reports/CHDIR11/ExecutiveSummary.pdf>), the didactic clinical exposure and scholarly work components of the concentration are organized along six central categories: social determinants of health, environmental hazards, healthcare access and preventive health services, mortality, morbidity, and behavioral risk factors. The central categories are aligned with the C21 pillars to allow for the spiraling of content areas to which the students have already been exposed. The HDC allows for the exploration of multi-faceted aspects of the central categories, including policy development, legal implications, economic considerations, and community engagement. The specific goals for the HDC participant are (1) to understand and be able to describe determinants of health disparities, (2) to gain exposure to and participate in healthcare delivery in an underserved area, and (3) to examine and/or apply a strategy to achieve health equity through scholarly work. This immersion experience provides the student with the opportunity to make use of

biomolecular information to understand and to possibly address the epidemiology of disparities in health observed in the community.

## Promoting diversity

### From fairness to excellence: making diversity matter

Marc A. Nivet (Association of American Medical Colleges) characterized the present as a major turning point for health care in America. The many systemic changes tied up with the Accountable Care Act and ongoing efforts to stabilize costs while continuing to improve the quality of care to a broader population mean inevitable upheaval for healthcare institutions. As the educators of future physicians and providers of advanced care and research, the academic medicine community has a critical role to play in achieving meaningful change during this turbulent process.

Disparities in health status, access to care, and quality of care received remain prevalent across our society. Nivet argued that excellence in health care for all should be a goal at the forefront of our minds as we reform for the future. And, while health disparities are largely attributable to the upstream social determinants of health,<sup>33, 34</sup> the field of medicine has a crucial role to play in achieving health equity; after all, the mission and purpose of the profession is to meet the health needs of society.

One important aspect in addressing health disparities is developing the appropriate workforce to understand and address the needs of an increasingly diverse patient population.<sup>35</sup> While longstanding efforts to address these issues focused almost entirely on increasing the numbers of racial and ethnic minorities in the health professions, efforts should now recognize how diversity contributes across the board to helping institutions meet their targets of excellence. This means coupling efforts to boost compositional diversity with a transformation of organizational culture to increase engagement and inclusion. Educational environments and institutional climates need to be explicitly structured to maximize the benefits of diversity, as decades of experience have shown that the passive presence of diversity within organizations, especially below a critical mass, is not sufficient to realize its deepest potential value.<sup>36</sup>

At many academic medical centers, diversity efforts remain detached from the core mission and run parallel to key strategic organizational processes.<sup>37</sup> This siloed structure reflects a model of diversity as a series of problem to solve or wrongs to right. The necessary shift is one from fairness to excellence, embracing diversity and inclusion as an essential component of meeting the mission and delivering top notch care (Fig. 3).

Despite decades of work to promote diversity within academic medicine, relatively few evaluations have been conducted to determine the most effective specific interventions. Because of the associations with charged issues and relegation to the organizational periphery, the value of diversity and inclusion efforts has often been accepted at face value, with interventions disconnected from a rigorous evidence base. Viewed in the context of efforts to bend the cost curve—improving health care for all, reducing health disparities, and

reversing the upward cost spiral—optimizing the impact of our investments in diversity and linking them to mission excellence is critical.

### Promoting diversity in healthcare professionals

There are many routes to eliminating health disparities: one of them is through education and career development of a new generation of translational researchers in the health workforce.<sup>39, 40</sup> We aim to prepare this workforce by conveying research skills and knowledge through translational research in health disparities to implement knowledge acquired in a multidisciplinary teamwork environment with the goal of achieving health for all. This concept was envisioned by Estela S. Estapé (University of Puerto Rico) as a continuum from research to translation to implementation, toward better health for all. (Fig. 4). Estapé and Mekbib Gameda (New York University) discussed strategies and educational programs that are actively working to attract underrepresented minorities to medical and scientific professions.

Gameda highlighted the very evident underrepresentation of minorities in academic medicine as faculty or researchers. Traditionally, minorities who do receive medical education have been encouraged to work in underserved communities, rather than to pursue academic research. This trend continues to the present. While he lauded these students' commitment to community service, he argued that such work was not mutually exclusive with academic medicine. The key to getting this message across, Gameda said, was curriculum innovation: to integrate health disparities education into medical school curricula; to focus on the social determinants of health; to understand interventions across social, behavioral, clinical, and policy paradigms; and to engage students in community-based research and education, so that students can experience how academic institutions can function in cooperation with communities. These efforts, he argued, were the likeliest means of truly encouraging diversity within academic medicine.

Estapé described a new postdoctoral masters of science program in clinical and translational research that she is spearheading at the University of Puerto Rico, which was developed as a joint program between two academic units: the School of Health Professions and the School of Medicine.<sup>41</sup> This program continues to expand and strengthen its reach, curriculum, and leadership, through the support of NIH, to diversify the workforce and to transfer knowledge into practice for better health outcomes while making health care a more efficient and effective process and reducing costs.

With regard to medical education and its role in advancing translational research, Estapé addressed several questions from her perspective as a leader in developing translational research education collaborations and partnerships:

**When to start?** At the predoctoral level, during the first two years of medical education, is the time to build the basic core values upon which to develop a research career. During these years, medical students need to acquire and demonstrate basic core values needed to excel in health service and to engage in eliminating health disparities: integrity, compassion, trust, hope, humility, and respect.

**What to offer?** While becoming a physician, the student should have opportunities in the curriculum that include core knowledge about health disparities and experiences that will facilitate active participation in community service, as well as activities that are planned to develop critical thinking skills. During the last two years of the medical curriculum, students who are interested in pursuing research careers should be provided with opportunities to work in a team both as a member and leader, to be a peer mentor or advisor to others, and to have active participation in mentored research activities.

**Who advances?** There are at least three criteria that will help the medical graduate in pursuing the ideal of becoming a translational researcher: self-motivation, passion to make a difference in the health of others, and, of utmost importance, strong mentors and support. Estapé emphasized that research career development is more productive and efficient after the medical graduate has determined an area of interest (knows what he/she wants to become) and what type of research is more suitable for her work. From her experience, Estapé believes that one should “only look to the past (evidence, knowledge) to create the future (hypothesis, research).” That evidence is expected to be a guide on the way to effective and efficient translational research.

**When to advance?** Although the foundation for a career as a researcher in translational research is best received during medical studies at the pre-doctoral level, formal studies for becoming a clinical and translational researcher are most productive at the postdoctoral level.

**What skills and competencies?** NIH has defined the core competencies needed to be part of the next generation of clinical and translational researchers. These 14 core thematic areas and 101 competencies define the basic knowledge, skills, and attributes that a master’s level candidate should attain.<sup>41</sup> The level at which the core thematic areas are covered in a curriculum will determine the competencies expected from the graduate and her success as an independent clinical and translational researcher.

Therefore, an effective way to make a significant contribution toward the elimination of health disparities is through the development of innovative multidisciplinary research degree programs with mentoring, collaborations, and formation of research teams as the essence for advancing clinical practice and outcomes. Some of the challenges to be met in advancing implementation are to break down institutional barriers, foster team science, facilitate public–private partnerships, promote collaborations and partnerships, network, and live with a positive attitude.

## Student presentations

A panel of medical students made a presentation at the conference, giving attendees the opportunity to hear the perspectives of students who are participating in and promoting health disparities education and research at their respective institutions and beyond.

The students brought a wide variety of personal experiences. Temitope Awosogba, (third-year MD student at the Mount Sinai School of Medicine) has explored her interest in health disparities research by conducting primary epidemiologic research in Mozambique and serving as an administrator, clinician, and educator at her school’s free student-run clinic for

the uninsured. Howa Yeung, (fourth-year MD student at NYUSoM), collaborated with several other students and the director of the Health, Medicine and Society course at the City University of New York (CUNY) Sophie Davis School of Biomedical Education to develop a novel, problem-based learning curriculum for the course. This innovative case-based curriculum used a series of workshops to demonstrate the methods fundamental to community health and disparities research. F. Garrett Conyers (second-year MD–PhD student at the Harvard Medical School) has worked extensively with faculty and administrators to incorporate health disparities into the curriculum. Sabrina Gard (fourth-year MD student at NYUSoM) earned her masters of public health degree in order to learn how to apply the principles of primary care public health to alleviating health disparities.

The students all agreed that the fundamental significance of making health disparities education and research a regular part of the curriculum lies in the manner in which those educational experiences are translated to patient care. First, these educational experiences allow students to develop cultural competence. Cultural competence in the healthcare system has been described by Betancourt *et al.* as acknowledging and incorporating the importance of culture, expansion of cultural knowledge, and adaptation of services to meet culturally unique needs.<sup>42</sup> Students are taught that in order to address racial/ethnic health disparities in the United States, the health system, including the healthcare professionals who operate within it, must be more culturally competent. Understanding, for example, why an individual or population doesn't access care until late stages of disease, or why diet choices are made, does more for addressing health inequity than more paternalistic medicine. Health disparities research in medical education exposes students to the importance of thinking about health, not only as a function of individual decisions but also as a function of community, access, the built environment, and other social determinants of health and disease.

The question of whether health disparities education and/or research should be required in medical education was a point of some contention for the students. All four students believed that health disparities education should be required in the medical school curriculum, stating that the lack of student exposure to health disparities results in a lack of appreciation for the topic by trainees. Conyers felt strongly that health disparities resulted from decades of structural violence against marginalized communities, and that trainees must be required to study health disparities in order to unmask the institutional causes of disparities. Awosogba agreed that health disparities should be a part of medical school education due to the fundamental injustice inherent in the existence of health disparities. She argued that because health disparities may not result solely from biological differences between groups of people, differences in the social, economic, political, and physical environment must be better understood. As frontline members for delivering healthcare, physicians are in a unique and powerful position to influence the impact of these social injustices. On the other hand, given the time and dedication required in conducting and completing substantial research projects, Gard and Yeung argued that health disparities research infrastructure and support should be tailored to medical students expressing high levels of interest in the field and not be required for all. The students also discussed the manner in which health disparities have already been incorporated into their medical

education through lectures, small group discussions, and OSCEs, but have not been addressed as an issue of injustice or active violence against marginalized communities.

While the students agreed on the significance of incorporating health disparities education into medical school curricula, they also elucidated a number of barriers to the implementation of these programs. Awosogba and Yeung discussed the current lack of buy-in from medical schools: stakeholders must be convinced that health disparities are a necessary part of the curriculum and that health disparities education will produce better, more competent clinicians before structured education or research programs in health disparities can be initiated and integrated into medical education. Support for health disparities education and research opportunities also requires financial support, faculty mentorship, administrative support, and structured research programs. The students were collectively optimistic about the steps that are being taken, largely by their peers in medical schools across the country, to incorporate health disparities into medical school curricula and research opportunities.

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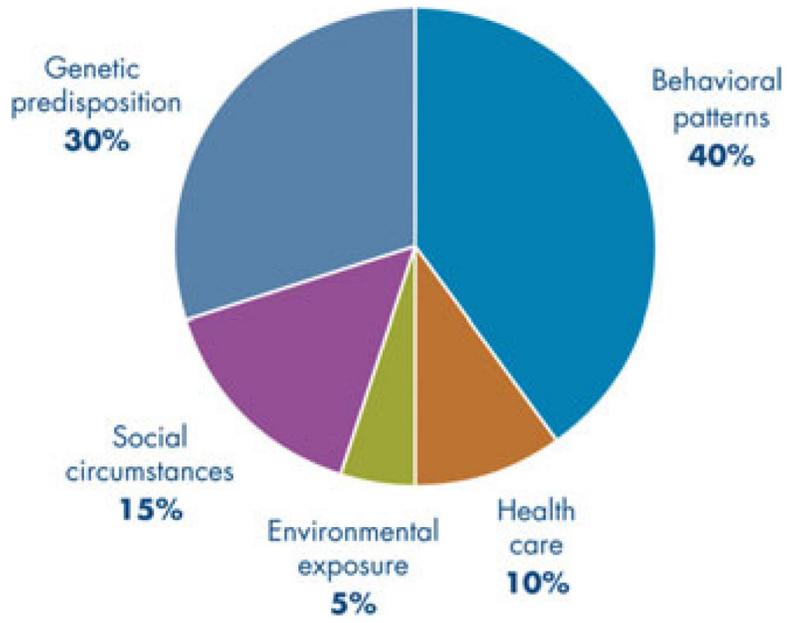
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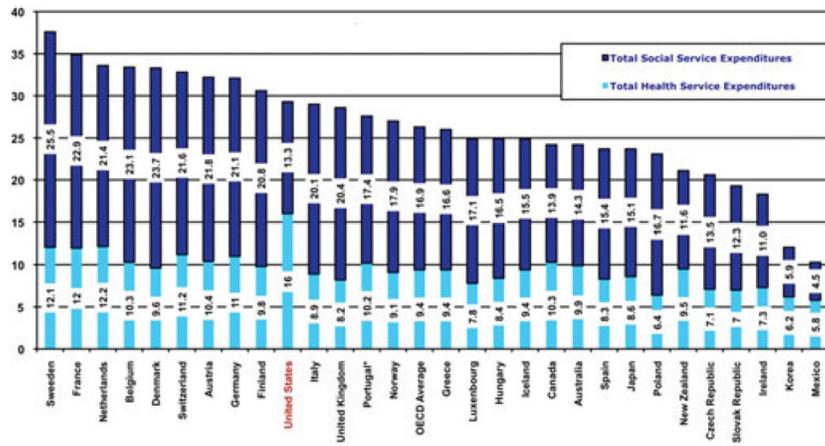
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**Figure 1.**  
Proportional contributions of determinants of health to premature death.



**Figure 2.** Health and social service expenditures by nation as percent of gross domestic product (GDP).



**Figure 3.** A model for the embrace of diversity and inclusion as a significant component of the mission to achieve health equity.



**Figure 4.** The healthcare continuum from research to translation to implementation. Training a new workforce in translational research may be key to addressing disparities in health care.

**Table 1**

## Suggestions for improving LGBT education by improving educational environment

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 Increase awareness

- LGBT student and/or employee group
- Out list of LGBT-identified faculty, students, and staff
- Dedicated LGBT center
- LGBT-specific admission materials
- Faculty governing body support of marriage equality
- Anti-discrimination policies
- Rainbow sticker campaign

## Increase didactic and experiential learning

- Use existing curricular resources on MedEdPORTAL and the Fenway Institute
- Gay and Lesbian Medical Association “Recommendations for LGBT Equity and Inclusion in Health Professions Education”
- Simulation cases
- Clinical case discussions with LGBT patients
- Standardized patient cases with LGBT patients
- LGBT-focused community health centers

## Increase personnel development

- Institutional mission statement including supporting communities and their people
  - Institutional commitment to diversity
  - Recruit and retain LGBT faculty and students
  - Develop promotion and tenure pathways for LGBT health disparity and population work
  - Funding for LGBT health disparity and population work
  - Coursework for students interested in LGBT health disparity and population work
-