

Teaching About Health Disparities Using a Social Determinants Framework

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The intersection of two trends in health intervention has the potential to fundamentally change the practice of medicine. First, research into the social determinants of health is revealing the mechanisms by which living conditions cause disease. Second, the restructuring of primary care around preventive interventions represents the convergence point of medicine and public health. These trends have profound implications for medical education. Whereas traditional educational paradigms favor a “bottom-up” approach to disease—focusing on molecular origins or organ systems—new paradigms must emphasize the entire causal chain of ill health to facilitate the understanding of novel interventions available to tomorrow's clinician.

KEY WORDS: medical education; health disparities; social determinants of health.

J Gen Intern Med 25(Suppl 2):182–5

DOI: 10.1007/s11606-009-1230-3

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A robust evidence base supports the existence of health disparities in the United States. A decade ago, the federal Racial and Ethnic Health Disparities Initiative was launched to address documented health disparities in six areas: infant mortality, cancer screening and management, cardiovascular disease, diabetes, HIV/AIDS, and adult and child vaccinations.¹ In 2002, the Institute of Medicine published the report *Unequal Treatment* highlighting the fact that racial and ethnic minorities—even those with equivalent access to the health care system—receive lower-quality care than white patients for many medical conditions.² Meanwhile, a growing consensus supports teaching medical trainees about health disparities. The Liaison Committee on Medical Education requires medical schools to demonstrate that cultural competence is an explicit curricular objective.³ The Health Disparities Task Force of the Society of General Internal Medicine published guidelines for medical education in 2007.⁴

Despite these developments, the methods for teaching future physicians about health disparities are fundamentally constrained. Disparities research and education in the United States has focused on race and ethnicity—perhaps understandably, given the historical legacy of racism—but gives short shrift to other determinants, such as socioeconomic class.⁵ Too often, learning about disparities in health is

reduced to learning about disparities in *health care*, again precluding a broader perspective on the proximate causes of inequality. Globally, however, research and education about health inequality has embraced the wider lens, exemplified by the World Health Organization's Commission on Social Determinants of Health, created to “marshal the evidence on what can be done to promote health equity.”⁶ The Commission defines social determinants of health as the circumstances in which people are born, grow up, live, work, and age, and the systems put in place to deal with illness.

REFRAMING HEALTH DISPARITIES AS SOCIAL DETERMINANTS OF HEALTH

As we approach the hundred-year anniversary of the original Flexner report on medical education reform, it should be acknowledged that there have been dozens of calls for a “new Flexner report” on a plethora of topics. Yet few of these calls would meet the high standards of the original: grounding in a paradigm shift in our understanding of human disease.⁷ Just as the Flexner report was published in an era when the four humors were yielding to Koch's postulates, we find ourselves with a growing ability to map causal chains of ill health from the societal level to the molecular level. Traditional educational frameworks are not well-suited to demonstrate the mechanisms by which living conditions cause disease. These frameworks favor a “bottom-up” approach to disease, particularly in preclinical undergraduate medical education, focusing on molecular origins or organ systems at best. Problem-based learning takes a more holistic view of a given patient, but still struggles to incorporate population-level health characteristics such as social isolation. When health disparities training is part of the curriculum, it is often taught as a jumble of statistics and isolated from physiology and pathophysiology courses. A social determinants framework would represent a shift to teaching how population-level influences affect physiology to cause disease.

SOCIAL DETERMINANTS OF HEALTH: A SURVEY OF THE EVIDENCE

The proposition here is to advance the structure of the medical training curriculum; questions of curricular content would necessarily follow changes in structure. Yet it may be useful, in moving from the realm of the abstract to the more concrete, to describe key concepts that would be included in a curriculum anchored in the social determinants of health. First would be a categorical understanding of the domains of health

determinants (e.g., genetics, social circumstances, environmental conditions, behavioral choices, and medical care) and their relative contribution to poor health.⁸ For example, the notion that medical care accounted for only five of the thirty years of life expectancy gained over the course of the twentieth century would not just come to light, but be a central focus of a revamped curriculum.⁹ A more sophisticated approach could draw upon research on “actual causes of death”—such as tobacco use, physical inactivity, and alcohol consumption—and examine how linkages between the domains of health determinants contribute to poor outcomes.^{10,11} For example, when children grow up in impoverished social environments, internal motivation for staying healthy is less likely to be present, affecting health behaviors in later life.¹²

A second key component of a social determinants curriculum would revolve around the critical distinction between absolute poverty and relative poverty as it relates to health. We are accustomed to realizing how absolute poverty—food, water, shelter, and sanitation—can contribute to ill health. More subtle are the health consequences of relative poverty, which can be roughly defined as the effects of a person’s socioeconomic position, granting that the person’s material needs have been met. Research over the past three decades, much of it originating in the United Kingdom, has supported the following premises. There are marked inequalities in health that correlate with socioeconomic strata;¹³ this finding persists across multiple countries.¹⁴ The gradient in health extends through to the top of the social hierarchy, as demonstrated in the Whitehall studies of British civil servants, arguing against an exclusively material cause for the gradient.¹⁵ And finally, the social gradient persists even when normalizing for lifestyle factors, e.g., rates of tobacco use when investigating coronary artery disease.^{16,17} That is, there is something inherent to position within society—*independent of material privation or “bad habits”—which is associated with ill health.* A number of thinkers have attempted to supersede correlation with causation, employing concepts such as capability poverty, low control, or lack of empowerment.¹⁸ The importance of understanding this relationship between socioeconomic position and poor health lies in its potential to uncover pathogenic mechanisms, particularly for non-communicable diseases.

HOW A SOCIAL DETERMINANTS FRAMEWORK WOULD ENHANCE MEDICAL EDUCATION

The survey of research above suggests the fundamental method by which a social determinants framework would enhance medical education: it would broaden students’ perspectives on reducing health disparities. For future physicians, health disparities become the expected consequences of certain proximate causes—and so a patient’s highest level of educational attainment, for example, becomes a more critical piece of information to gather in the medical history. The rationale for learning about disparities deepens such that they are viewed not merely as lamentable injustices but rather those proximate causes—such as low educational attainment—with pathophysiologic effects that can often be intervened upon.

At least three other reasons shore up the idea of teaching about health disparities using a social determinants frame-

work. First, the concept breaks down false dichotomies which have historically divided understanding of inequalities within countries from inequalities between countries. Those interested in ameliorating health disparities have generally been classified geographically, with international or “global” health occupying one sphere and domestic disparities occupying another sphere. An understanding of absolute and relative poverty could go far toward erasing these arbitrary distinctions by emphasizing the common origins of poor health—particularly as the global burden of disease shifts increasingly toward chronic, noncommunicable diseases.¹⁸

Second, an understanding of social determinants provides a more cogent argument for interdisciplinarity in health care delivery than currently exists. At two levels, physician with other health professionals and physician with policymakers, a grounding in the social origins of disease would reinforce the importance of collaboration for superior health outcomes. Coordinating with social services to remove a child from an unsafe home environment may be obvious enough, but facilitating an adult’s earning their GED may be no less important to maintaining their health. The argument is not for physicians to assume a radically paternalistic role but rather to understand the health effects of social factors that are potentially modifiable—often by our colleagues in social work, physical and occupational therapy, or nutrition. Similarly, a change in the purview of physician advocacy could follow once the links between social policies and health are made plain. The 2008 U.S. presidential campaign was notable for its focus on health care, but also for how these discussions were generally divorced from a commentary on how other types of policy reform could affect public health.¹⁹ One could argue that the physician’s role in public debate is to articulate the health effects of policies regarding taxes, housing, transportation, environmental standards, and education.²⁰ For instance, based on what is known about early-childhood education, it could represent the most impactful health intervention for physicians to champion.^{5,21}

Third, a determinants-oriented curriculum could most effectively demonstrate the limits of current medical intervention to a new generation of physicians. Of course, it is not a novel observation that direct medical care may be more of a mitigating influence than the central contributor to reduced mortality and improved health. However, a redistribution of resources in accord with this knowledge has not materialized; health policy and government outlays focus overwhelmingly on health care rather than disease prevention or population health. In 2005, the United States spent \$6,401 per capita on health care, about twice the per capita spending of the United Kingdom; both countries have similar health outcome indicators.²² Such data is often cited to exemplify inefficiency in the U.S. health care system—or to tout the benefits of universal health insurance coverage, as is found in the U.K. An alternative hypothesis is that, in the U.S., resources are misallocated to medical care instead of other determinants of ill health, with diminishing returns. More than anything, this is an empirical question that must be answered through rigorous investigation. Training future physician-scientists and health services researchers using a social determinants framework could help balance dominant investigative interests in traditional molecular pathophysiology and access to high-quality medical care, respectively. Specific mechanisms by which social factors cause disease remain to be elucidated.

Furthermore, even when causative mechanisms are established, the efficacy of interventions to improve health would need to be tested—more so because of the far-reaching ramifications of population-level interventions.^{23,24} Integrating social determinants of health into the medical school curriculum could help inspire a new generation of disparities investigators and seed these scientific avenues.

WHAT WOULD A SOCIAL DETERMINANTS FRAMEWORK LOOK LIKE?

In his seminal report, Abraham Flexner described the corpus of knowledge a medical student should have gained in his preclinical years and the task before him in his clinical years.⁷

He knows the normal structure of the human body, the normal composition of the bodily fluids, the normal functioning of tissues and organs, the physiological actions of ordinary drugs, the main departures from normal structure, and in a limited fashion the significance of such departures both to the organs and tissues immediately involved and to the general economy of the organism...It remains, then, to teach the student how to get from the direct study of the patient himself whatsoever data remain to be collected.

For almost a century, now, this curricular arrangement has formed the basis of American medical education. Traditionally, teaching and learning about population health has been reserved for the classrooms of public health schools or novel interdisciplinary programs like the Robert Wood Johnson Health and Society Scholars program, which is designed for postdoctoral training. Recent years have witnessed a trend toward better integrating the social sciences into undergraduate medical education—and problem-based or case-oriented learning has facilitated this trend. For instance, the University of California at San Francisco incorporates sociocultural themes (such as patterns of health and disease across populations) and behavioral themes (such as stress, distress, and coping) into its preclinical curriculum.²⁵ The proposal here is to go further in this direction through a dual life course approach: emphasizing the “life course of disease” during the preclinical years and the life course of patients during the clinical years.

Understanding the ultimate origins of disease using an innovative multilevel approach—which supplements the traditional and powerful reductionist approach—has shed light on the determinants of health disparities. This approach, pioneered by the National Institutes of Health-sponsored Centers for Population Health and Health Disparities, uses methodology crossing disciplinary boundaries to determine how population risk relates to individual risk—or how macro-level influences “get under the skin.”²⁶ A key intermediary, psychological stress, has been strongly associated in disease states as varied as depression, cardiovascular disease, and progression of HIV/AIDS.²⁷ In one example, researchers have gathered data linking poverty (at the societal level) to social isolation (at the psychosocial level) to physiologic stress (at the clinical level) to increased tumor cell survival (at the molecular level),

supporting their hypothesis that the social environment plays a predominant role in racial disparities in breast cancer mortality.²⁸ By explicating primary mechanisms of disease in this way, health disparities research could have the added benefit of enhancing the health of all individuals, not just those bearing the burden of disparities.

More generally, our growing ability to map causal chains of ill health in this manner facilitates an understanding of the various levels of intervention available to tomorrow's clinician. Although it may seem a daunting task for the overworked physician to expand her scope in this way, pioneering examples demonstrate the feasibility of integrating a social determinants framework into clinical practice. In resource-poor settings including Uganda, Liberia, and Haiti, qualitative methods grounded in patients' “illness narratives” have been used to elicit the mechanisms by which complex societal forces, such as violence, affect health.²⁹ Importantly, the goal of employing illness narratives is to directly influence the design of health interventions—in this case, programs for HIV prevention and directly-observed antiretroviral and tuberculosis treatment. On the quantitative side, the multilevel approach could be particularly useful for risk stratification to target services to the most vulnerable individuals. For instance, one research group investigating disparities in prostate cancer outcomes between African-American and Caucasian men has accumulated evidence suggesting that certain cancer-associated biomarkers are only relevant in the context of specific social exposures, such as neighborhood characteristics.³⁰ In this way, understanding the life course of disease facilitates the clinician's approach to understanding what interventions would be most efficacious for individual patients.

Meanwhile, the clinical years of undergraduate medical education would shift the locus of learning from diseases to patients (just as in the traditional Flexnerian approach). The transformation required by a life course approach, however, would be a chronologic awareness of how various influences from the domains of health determinants contribute to wellness and disease. Trainees would learn not just about signs and symptoms—the downstream manifestations of proximate causes—but also when in the life course proximate causes exert their effects, with the goal of endowing physicians with the knowledge to prevent disease. In one example, the Foresight Project on Mental Capital and Wellbeing, scholars from across disciplines synthesized the evidence on positive and negative influences on “mental capital” across the life course to demonstrate the evolution of mental health and illness.³¹ Trainees would study such life course maps to understand what health interventions would be most efficacious and precisely when they would be most usefully deployed. An analogous map in the field of cardiology could be constructed by starting with the Framingham risk scores and integrating measures of socioeconomic status, such as educational attainment.³² More generally, organizing medical knowledge in such life course maps would—if combined with the development of predictive tools incorporating genomic data, biomarkers, and advanced imaging—lay the groundwork for evidence-based preventive medicine.

Teaching about health disparities using a social determinants framework would represent a modest but significant change in organizing medical education. A reasonable rebuttal to the proposal may be to question whether this corpus of knowledge is in the ambit of the physician—rather than the public health

practitioner or the health policymaker. Rudolf Virchow famously described doctors as “the natural attorneys of the poor,” and certainly moral responsibility is part of the reason our profession must become more effective at diminishing health disparities. But a social determinants framework also represents a movement toward understanding the role of the physician as preserving health beyond fighting disease. Whether such a shift is embraced will depend on whether the next generation of doctors understands what is required to preserve health.

Acknowledgements: *I am indebted to Melissa Aguirre, Brian Strom, David Asch, Rajesh Panjabi, Nicholas Stine, and Sandeep Kishore for their valuable comments on earlier drafts of this manuscript.*

Conflict of Interest: *None disclosed.*

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