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Structural Competency and African Contexts: A Mixed Methodological Approach to Interrogating Strategies for Greater Health Equity

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Diversity and inclusion in the American health care system constitutes, arguably, one of the most important and far-reaching areas of concern for social justice currently and historically. Patient-oriented issues such as affordability of care, access to care, and equity of care, as well as diversification of physician training, are primary points of focus for health justice advocacy at the micro-level. Medical sociologists Jonathan Metzl and Helena Hansen argue that the cultural competency model has emerged as a method that attempts to reduce patients' overall experience of stigma and poor health outcomes by producing more culturally sensitive physicians (Metzl and Hansen 2014: 126). Less often considered, however, are the macro-level, systemic, and structural challenges to equity in health care delivery: that is, the organization of institutions and policies of neighborhoods and cities, and of economic infrastructures (Metzl and Hansen 2014: 127). How, for example, do zoning laws that position poor communities closer to roads and polluting facilities expose these citizens to

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environmental toxins that inequitably produce specific health problems? Too often, "upstream" decisions about such matters as governmental funding priorities, food delivery systems, and so on are assumed to have little to do with health inequities and outcomes that emerge "downstream" (O'Neill et al. 2007: 665).

This chapter explores the question of diversity and inclusion in health care within a medical humanities framework, focusing on structural inequities in the United States and sub-Saharan Africa, and utilizing a narrative approach to call out some of the base assumptions regarding medical education and delivery practices. While health systems in highly industrialized nations are presumed to be significantly better than those in less industrialized nations (based primarily on gross domestic product [GDP]), a comparative analysis of the United States and sub-Saharan Africa can be instructive in highlighting some of the surprising consistencies that accrue around the relationship between communities living in poverty, environment, and health outcomes regardless of residence in a developed country. Despite its relative wealth as a nation, the World Health Report 2000, *Health Systems: Improving Performance,* ranked the United States thirty-seventh in the world in its assessment of the quality of the nation's health systems (Murray and Frenk 2010: 98). Further, in a global comparison with other wealthy nations, the United States is also increasingly falling behind each year (Murray and Frenk 98). One of the more telling revelations within the report is that while the United States ranks number one in health care spending per capita, it ranked thirty-ninth for infant mortality, forty-third for adult female mortality, forty-second for adult male mortality, and thirty-sixth for life expectancy, placing the country well below other industrialized nations (Murray and Frenk 2010: 98). This apparent discrepancy in health care spending versus overall outcomes begs the question as to why Americans are "pay[ing] so much to get so little" (Murray and Frenk 2010: 98).

An examination of the relationship between health policy and poverty, however, might begin to explain the disparate numbers. The *World Health Report 2000* discovered that "in almost every country where key informants were surveyed, the poor were identified as the main disadvantaged group" (33). Indeed, according to the US Department of Health and Human Services' 2015 report "Financial Conditions and Health Care Burdens of People in Deep Poverty," 14.5% of the US population is officially categorized as living below the annual income poverty threshold of $18,769—a threshold that some might argue is extremely low (Frolich

et al. 2015: 1). Moreover, many Americans of middle-income status are becoming increasingly vulnerable to burgeoning costs of health insurance and care, while their incomes remain static (Komisar 2013: 1). A report by the Middle Class Security Project, an initiative of the AARP Public Policy Institute, reveals that "one in five people are in [middle-income] families that have problems paying medical bills," many of whom have experienced "serious financial stress" such as inability to pay other basic necessities like food, clothing, and shelter, or medically related bankruptcy (Komisar 2013: 1).

As such, the more appropriate questions might be *which* Americans are receiving the bounty of US health care spending and which ones are not? And how might the inequitable spending and distribution of risk to the poor and tenuously middle class in the United States translate into the dismal life expectancy and mortality rates cited in the report? The relationship between poverty and health outcomes in the United States has been clearly defined, but less so the condition of many of those historically categorized as "middle class." The overall wealth of the United States is presumed to be sufficiently distributed among individuals and families, but it is not. This presumption has obscured the degree to which the structural determinants of poverty, inadequate income, and high costs of health care play a major role in general population health outcomes. Considerations of the experience of the poor and struggling middle class in the United States, and the means by which inequity is built into the very structures of the health care system—what I call "structural violence"—thus expose the failures and ultimate frailty of US health care systems, including the ways in which we educate physicians to understand health outcomes for vulnerable groups. By contrast, less-developed countries with lower GDP such as the majority of those comprising sub-Saharan Africa already understand poverty, environment, and systemic structures as a starting point for improving general population health and diminishing inequity.

Thus, the United States, as a highly industrialized, wealthy country with extremely poor health outcomes for its more vulnerable citizens, belies the expectation that there is a corollary between the wealth of a nation and the health of its citizens. It becomes a useful case study for understanding the complex social and political factors that generate health inequities. I compare the struggles of the United States (as an industrialized nation) with health care in sub-Saharan Africa because of their relative distance from each other in terms of systemic structures and practices. The European "scramble for Africa" produced, and in many instances continues

to reproduce, underdevelopment and systemic legacies of structures and practices via European colonial biomedicine as a cultural system (Vaughan 1991: x). While I do not suggest that the United States has neither stake nor influence in Africa currently, the colonial legacies of Europe are deeply embedded in the way institutions and systems are conceptualized and administered (Vaughan 1991: 8). For example, Megan Vaughan argues that during the era of European colonization, "the distinction between missionary and state medical services and personnel was often not a very clear-cut one. Mission hospitals and dispensaries were frequently funded by colonial governments, and individual doctors and nurses sometimes moved between the two systems" (23). Thus, the relative "distance" between the United States and sub-Saharan Africa allows a focus on poverty and a comparative analysis of ideological approaches regardless of GDP as a measure of outcomes.

It is in this context that Abraham Verghese's *Cutting for Stone* (2012) provides an excellent narratological fleshing out of these complex concerns of structural competency in medicine in a comparative context. The novel chronicles the birth and lives of twin brothers Marion and Shiva Praise Stone, the sons of an ill-fated union between an Indian nun, Sister Mary Joseph Praise, and an English surgeon, Thomas Stone, at a Catholic Mission Hospital in Addis Ababa, Ethiopia. Both Marion and Shiva go on to become medical professionals under two completely different systems and methods of education: Shiva undergoes an informal apprenticeship under their adoptive mother, Dr. Kalpana Hemlatha (known as Hema), an obstetric gynecologist by training, and Marion attends traditional formal medical school training in Ethiopia and the United States.

Through thick descriptions of the cultural, political, and interpersonal complexities of human relations and political contexts, Verghese's 2009 novel offers a nuanced interpretation of not only the notion of structural competency previously described by Metzl and Hansen, but also the notions of structural violence and structural frailty, that I define as conceptual frameworks for understanding systemic challenges to health equity.[1] A nation such as the United States that has the wealth and infrastructural capacity to deliver health care equitably to its citizens but refuses to create those structures and, instead, reproduces inequitable social, economic, and political systems that obstruct delivery of health care to all, including the most vulnerable, enacts structural violence. And a nation such as Ethiopia that lacks the infrastructure and other political, social, and economic resources in order to build solid structures for health care delivery, I define as being in a state of structural frailty.

Verghese's novel not only demonstrates the effects of structural frailty in the African context, but also reveals the structural frailty of the American system of medical education and delivery. In doing so, Verghese highlights the ways in which the United States can learn from Africa about holistic care and empathetic doctoring, as well as the ways in which Africa might benefit from learning about structural violences in US health care. Questions raised in Verghese's novel that interrogate assumptions and strategies that might increase equity in health care include the following: In what ways must the relationship between poverty and inequity in health care be reimagined and to what purpose? What modes of resilience and more humanely informed strategies of doctoring can emerge from grappling with the different experiences of structural frailty in western and developing cultural contexts? How can the relationship between individual health and community health be reimagined? And in what ways does the relationship between the doctor-patient relationship and the building of structural competency mutually inform greater overall health care delivery?

The first part of this chapter focuses on elucidating the concept of structural competency as developed in the US context and its relevance to non-western contexts, namely sub-Saharan Africa. The concepts of structural violence and structural frailty are proposed as a means of articulating the status of the State's willingness and capacity to develop structural competencies, followed by their implications for public policy and practices. The chapter then turns to an analysis of Verghese's *Cutting for Stone* through the conceptual frameworks of structural competency, structural violence, and structural frailty in order to consider what lessons might be learned to produce more equitable health care systems and delivery.

STRUCTURAL COMPETENCY IN THE MEDICAL HUMANITIES

The field of medical humanities in the United States and Europe has brought to bear a humanities-oriented sensibility to medical training and health care provision over the past forty-odd years (Holmgren et al. 2011: 246). Early iterations of the medical humanities focus on humanizing the doctor-patient relationship and interactions in a clinical setting, utilizing approaches commonly known as cultural competency and, more recently, as narrative medicine (Charon 2005: 261). Recent theorizing, however, proposes that clinical medical training must move beyond the doctor-patient dyad and the somewhat limited focus on individualized physician empathy to include a more robust examination of the larger

structural contexts—that is, the organization of institutions and policies, neighborhoods, and cities—and the economic infrastructures, such as the funding of safe, healthy, and affordable housing, that form the "social and economic determinants, biases, inequities, and blind spots [that] shape health and illness long before doctors or patients enter examination rooms" (Metzl and Hansen 2014: 127). In their groundbreaking 2014 essay in *Social Science and Medicine*, Metzl and Hansen propose the development of "structural competency" to address the systemic institutionalized processes of stigmatization and marginalization, or what I call structural violence, that produce and reproduce inequitable social, political, and economic systems that obstruct the equitable delivery of health care (128). They define structural competency as "the trained ability to discern how a host of issues defined clinically as symptoms, attitudes, or diseases...also represent the downstream implications of a number of upstream decisions about such matters as health care and food delivery systems, zoning laws, urban and rural infrastructures, medicalization, or even about the very definitions of illness and health" (128). Such a model promotes skills for "recognizing how 'culture' and 'structure' are mutually coimplicated in producing stigma and inequality" (128) and further serve to highlight the limitations of medical expertise in the face of complex, evolving economic and structural issues (131). These structures, Metzl and Hansen argue, are frequently rendered invisible in medical education. Through training in structural competency, which combines knowledge about embodied disease with analysis of social systems, they hope to place notions of structural stigma "at the center of conceptualizations of illness and health" (131).

It is worth noting, however, that Metzl and Hansen approach their development of structural competency from within the US context, in which certain basic infrastructures such as potable running water, consistent electricity and internet access, developed roads, highways, and systems of transportation are presumed to be already in place, and therefore render invisible the social, economic, and political structures—such as zoning practices, tax structures, and allocation processes—that produce inequities. In the United States, the concentration of health care facilities in urban locales, for examples, renders invisible the challenges that those living in rural, poor environs may have in accessing care. This kind of rural/urban divide in accessing health care is an issue in sub-Saharan Africa as well (*World Health Report 2000* 2000: 33). Thus, while Metzl and Hansen's notion of structural competency serves to unmask these

obscured challenges in the US context, a comparative study of similar structural challenges and dissimilar infrastructural challenges between sub-Saharan African and the United States will shed light on the shared structural frailties of health care systems and opportunities arising from acknowledging such frailty that this chapter will bring to light.

I explore structural competency here within the geopolitical context of sub-Saharan Africa, where the basic infrastructure for health care delivery is often severely delimited and therefore exerts tremendous pressure on the delivery of care. In such contexts, the infrastructural challenges to the training of medical professionals, retention of medical professionals, and delivery of care to communities amplifies, rather than obscures, the "hierarchies, economies, [policies], and networks through which health and illness are produced and maintained" (Metzl and Hansen 2014: 129).

These issues are amply demonstrated by the Sub-Saharan African Medical School Study (SSAMSS). Published in 2011, it is the first study of its kind to attempt a near-pan-African assessment of the state of medical education in the region and produce findings on the status of medical schools and trends within medical education across sub-Saharan Africa (Mullan et al. 2011: 1113). Indeed, the central concern of the study frames the key issues of health delivery challenges in Africa as a function of low physician-to-population ratio and low productivity of medical schools generally to produce enough physicians to serve local populations (1113). But the study also reveals intersecting structural factors at the level of governmental health and educational policy, facility infrastructure, and educational accreditation standards that negatively affect the efforts to scale up medical professional staffing and delivery of care (1116, 1119). As an effort to fill the knowledge gap about trends in African medical education, the study provides an informational baseline "for the status of, trends in, and prospects for African medical education for educators, policy makers, and international organisations" (1113). Utilizing the findings of this comprehensive study, I explore how Metzl and Hansen's notion of structural competency must be modified when the basic infrastructure for adequate health care delivery to a significant proportion of the population is not in place.

While Metzl and Hansen's work on structural competency brings a sociopolitical analysis to bear on inequity in health care delivery in the United States, and the SSAMSS provides a quantitative assessment of the challenges to medical education and its relation to health care delivery in sub-Saharan Africa, I propose a narrative approach to further examine the

challenges highlighted by Metzl and Hansen and the SSAMSS and to illuminate the ways in which the US and African contexts may speak to each other toward achieving greater structural competencies in both. Adapting notions of structural competency to sub-Saharan contexts and notions of structural frailty to the US context bring to light the shared challenges of delivering equitable access to health care to the most vulnerable of each society (i.e., the urban poor and impoverished rural-based populations) while exploring the different cultural, national, and continental contexts that would presume little to no basis for comparison.

Physician-writer Abraham Verghese's novel *Cutting for Stone* (2012) dramatizes these challenges across the contexts of US medical training systems and African medical education and delivery. The novel powerfully demonstrates the narrative approach to exposing and addressing structural competencies through its elucidation of both structural challenges and opportunities for thinking about models of equity in health care. I begin with a comparative analysis of the different concerns that undergird the development of structural competency in the United States and sub-Saharan Africa. I then follow with an analysis of additional perspectives on structural competency in medical education raised by Verghese's novel. This mixed methodological approach seeks not only to model the diverse intellectual approaches to enriching our understanding of health inequality, but also to promote the collectively constitutive habits of mind cultivated by such diverse approaches.

STRUCTURAL VIOLENCE AND STRUCTURAL FRAILTY

The delivery of quality health care equitably and evenly to all of a nation's citizens as a basic human right is a challenge both in the United States and in sub-Saharan Africa. In the United States, the inequities of access and care are located in beliefs, practices, and structures that disadvantage the racialized, economically impoverished, and other stigmatized populations (Bonilla-Silva 2003; Hatzenbuehler and Link 2014; Metzl and Hansen 2014). Take, for example, the notion that African Americans with heart disease are culturally disinclined to comply with recommended dietary changes for cardiovascular health. The cultural competency approach ignores the possibility that failure to comply may have as much to do with residence in geographic zones known as food deserts, large blocks of neighborhoods that do not have grocery stores or healthy food options within an accessible distance (Metzl and Hansen 2014: 127). Another

example is the idea that Latino immigrants at risk for diabetes refuse to exercise; under cultural competency strategies, this refusal is regarded as a cultural issue to be negotiated at the level of the individual (Metzl and Hansen 2014: 127). In contrast, a structural competency approach acknowledges the idea that, for example, compliance with an exercise regimen might not be related to cultural factors, such as a failure to understand the importance of exercise, but rather, structural elements that ghettoize immigrants in poor neighborhoods with no sidewalks or parks that delimit the opportunity for exercise. Such assumptions about flawed individual and stereotyped group behaviors have resulted in more focused attention on how to address the individual attitudes and behaviors that enact stigma in clinical interactions (Metzl and Hansen 2014: 127).

In recent years, moreover, there has been growing attention to how institutions and social conditions work to produce stigma and inequity (Metzl and Hansen 2014: 127). Research in a range of disciplines such as the social sciences (Hatzenbuehler and Link 2014) and environmental epidemiology (O'Neill et al. 2007) repeatedly reveals the ways in which doctors are becoming more aware of how "pathologies of social systems impact material realities of ... patient's lives" (Metzl and Hansen 2014: 127). For example, environmental risks such as high levels of exposure to air pollution are connected to a host of health risks, including increased numbers of children born with autism and respiratory issues like asthma (Roberts et al. 2013). Metzl and Hansen highlight such concerns, noting that "some locales prosper while many others face a state that urban planners define as 'infrastructure failure'" (Metzl and Hansen 2014: 127).

As discussed previously, I define structural violence as the willful neglect of the well-being of the entire population's health in spite of the robust knowledge produced by many disciplines on the effects of environment and poverty on health. It is an act of institutional and structural violence if a nation—in this case the United States—has the capacity to improve access to health care for all, as exemplified in its passage of the Affordable Care Act, but refuses to do so, as with efforts by the current presidential administration to undermine and ultimately repeal the law. Not only is the US health care system structurally violent, such violence works to produce structural frailty. It produces a systemic weakening of US health care systems—indeed, all social systems—and renders them vulnerable to the shifting tides of political factions and ideologies. With the change of power in the executive and legislative branches of government brought about by the 2016 presidential election, the United States now faces unprecedented

budget cuts in upstream institutions like the Environmental Protection Agency (see Whitman 2017), along with comprehensive divestiture in social systems, policies, and laws that shore up resiliency such as those supported by the Affordable Care Act (see Luhby 2017) that ultimately serve the greater population health of all citizens.

Infrastructures in sub-Saharan Africa are frail as well, but in different ways. Structural frailty, again, is defined as the severely delimited capacity of a nation to create the infrastructure and to leverage other political, social, and economic resources to build solid structures for health care delivery to all citizens. In sub-Saharan Africa, this is demonstrated primarily through insufficient numbers of doctors and medical trainees per capita and exacerbated by widespread impoverished national economies. At the time of the aforementioned SSAMSS conducted in 2009, the region had a physician-to-population ratio of 18 per 100,000 compared to 370 per 100,000 for France, and Africa's poorest countries, the authors note, had even greater physician shortages (Mullan et al. 2011: 1113). Health care workers, disenchanted with small salaries, limited career options and research opportunities, heavy teaching loads, and lack of equipment and support staff, often chose to emigrate to countries where medical professionals are compensated more generously on a variety of levels, causing a professional "brain drain" (Mullan et al. 2011: 1116). With few instructors to teach in already resource-poor medical schools, it is difficult for medical schools to increase enrollments and produce their own medical professionals, who will remain in-country to address local and national medical delivery needs.

In the United States, poverty can function as a stigmatizing marker amid many other factors, such as food deserts and unfair tax codes that could be, but frequently are not, addressed socially and politically to reduce structural violence. In Africa, endemic poverty, inconsistent coordination of governmental policy, and private sector efforts at the most fundamental level of training and retention of health care workers form the primary nexus of structural frailty that struggles to build far-reaching capacity.

Public Policies and Practices

Structural violences and structural frailties are deeply interconnected with public policy and the ways in which governmental agencies understand their missions and structure their systems. US-based notions of structural

competency seek to recognize the ways in which the structures that shape health and illness "reflect specific financial, legislative, or indeed cultural decisions made at particular moments in time" (Metzl and Hansen 2014: 130). Numerous examples of structural violence enacted in policies and laws are rendered invisible until the next public health crisis. For example, how does legislation that seeks to defund Planned Parenthood for one specific service affect the significant numbers of poor women, who will consequently no longer receive affordable, general gynecologic care in easily accessible communities (see Redden 2016 and Stevenson et al. 2016)? Or, how do we vet cost-saving decisions made by local governments at the expense of public safety, as in the case of Flint, Michigan, where city officials changed the water source from a clean water lake to a highly polluted river and also ended standard water treatment measures to save money—a decision that literally poisoned the largely working class and poor populations of the city (see Kennedy 2016)? Structural competency attempts to unveil the ways that, with clearer attention to the interlocking factors of economics, infrastructure, geopolitical mapping, and other factors, medical practitioners can identify and devise strategies to disrupt the uneven impact on raced and classed experiences of health inequity. Metzl and Hansen cite numerous instances of community-based actions and interventions derived from historical examples, such as physician Jack Gieger's community health centers in the Mississippi delta during the 1960s that "prescribed" healthy foods for patients to be filled at grocery stores that were then billed to the center (Metzl and Hansen 2014: 130). Then, there are contemporary efforts such as those by Mindy Fullilove, who works with community-based organizations, urban planners, and architects to promote healthy spaces for use by all city residents (Metzl and Hansen 2014: 130). Metzl and Hansen recommend studying these types of largely isolated and "alternative" methods as part of an intentional community- and problem-based curriculum that makes visible the weaknesses and challenges in the US health care system at the local level; that instills the capacity to observe and analyze those structural frailties; and that actively educates students to think creatively about how groups might work together to design structural interventions. Gieger's and Fullilove's examples demonstrate the idea that community-based education and problem-based practice are necessary for addressing the structural frailties of the US health system.

In comparison, in sub-Saharan Africa, governmental policy decisions regarding allocation of resources and coordination of strategy and effort in supporting medical education typically fall within the domain of the

ministries of education and health. Most often, the Ministry of Education is tasked with policies relating to funding education and preparing a medical workforce, and the Ministry of Health functions as the employer of graduates. The coordination of priorities, budgets, and outcomes, however, tends to be poor (Mullan et al. 2011: 1117). Such structural frailty results, at times, in inappropriate curricula and a graduate pool of medical professionals that "exceeds the in-country capacity to hire new physicians, despite the need for health services" (Mullan et al. 2011: 1117). In this instance, structural competency is less about rendering the invisible violence embedded within the foundations of medical delivery visible and readied for intervention. Rather, it is about building greater capacity to more effectively and efficiently communicate how best to structure medical education and delivery in the first place.

Interestingly, lack of infrastructure and other structural challenges in sub-Saharan Africa have resulted in the kind of innovative pedagogical strategies that are beginning to be cultivated in the United States. In addition to the challenges cited previously, unreliable power, water, and telecommunications jeopardize training. Insufficient resources in terms of computers, student housing, and restricted internet access further delimit productivity of faculty and student trainees. However, these infrastructural limitations seemingly promote greater reliance on rural or community-based experiences, problem-based learning, and multidisciplinary team-based learning as the center of the more successful programs (Mullan et al. 2011: 1118); as well, these pedagogical innovations are frequently designed to address community-oriented or nationally focused medical education (Mullan et al. 2011: 1117). In this way, sub-Saharan Africa and the United States meet in the same place while approaching from different angles: community-based education and problem-based practice prove to be the most competent approach to promoting and delivering equity in health care.

Abraham Verghese's *Cutting for Stone*: Narrating Structural Challenges and Opportunities

Such dynamics are depicted incisively in Abraham Verghese's *Cutting for Stone*. Verghese, who holds both a medical degree and a master's in fine arts, illuminates the ways in which politics, economics, and culture can converge to reveal the complexities of health delivery, both enabled and limited by structural challenges, by depicting the more focused attention to the doctor-patient dynamic prevailing in Ethiopia. Verghese was born

in Addis Ababa, Ethiopia, to Indian parents who had been recruited as educators by the Emperor Haile Selassie. Fleeing civil unrest after the emperor was deposed, he immigrated to the United States with his parents and eventually completed his medical training in India before returning to the United States as an infectious disease specialist. In the 1980s, he took a leave from medicine to pursue a Master's in Fine Arts from the University of Iowa. He has united this training to establish a distinguished career that marries medicine and literature with ethics and empathy. The trajectory of the novel and its traversal of Ethiopia, the United States, and to a lesser extent, India, while not autobiographical, loosely links to his personal history and the national history of Ethiopia.

Cutting for Stone chronicles the coming of age of twin brothers Marion and Shiva Praise Stone. The brothers were born under delphic circumstances to an Indian nun, Sister Mary Joseph Praise, who had come to work at the Catholic Mission Hospital, colloquially known as "Missing," in Addis Ababa, Ethiopia. There, she met and worked alongside the famed English surgeon Thomas Stone. The two engage in an unordained coupling which results in a pregnancy that Sister Mary Joseph Praise was able to hide from everyone—including Stone; the Mission's administrator, Matron; and the two other doctors, Hema and Ghosh—until she goes into labor. Sister Mary dies in labor and Stone, realizing that he must be the father, and saddened at the death of Mary, flees in shame, abandoning his sons to Hema and Ghosh to raise.

Set in the 1960s, during the time of Eritrea's early efforts to gain independence from Ethiopia, the novel highlights the interconnectedness of several political and structural factors. First, the novel dramatizes the ways in which the Ethiopian-Eritrean civil conflict became an ongoing and escalating factor in the day-to-day existence of the characters. Second, it reveals the cultural factors defining the challenges of local/governmental/state reliance on Catholic and other religious charities to provide health care to the poor. Finally, *Cutting for Stone* illustrates how the political and the cultural combine to create the economic challenges that inform both the quality of health care delivery to the community and the different systems of medical education experienced by Shiva and Marion.

Both boys, raised on site at the Mission, grow up loving the practice of medicine. They both become health care workers, following two nationally and culturally different training trajectories invoked by each brother's respective namesakes. The first brother is associated by name with Shiva—the Hindu god of destruction, re-creation, and transformation—and his

naming signals the novel's undoing, re-creation, and transformation of our notions of what constitutes quality health care education and delivery, as witnessed in his commitment to the focus on community-based and problem-focused practice. This practice holistically attends to the specific needs of individuals as defined by the social context and engages the skills of deep listening, careful observation, and empathetic attention to the patient. By contrast, Marion is named after the nineteenth-century American doctor J. Marion Sims, the "father of modern gynecology," whose experiments, tools, and technologies revolutionized women's health, but notably at the expense of disadvantaged slave populations. Again signaled by naming, Marion goes on to pursue more formal medical education and winds up in an American medical school to complete his medical training, not by choice, but because he must seek exile, when he is wrongly implicated in Eritrean resistance activities that involved hijacking an Ethiopian Airways plane (440).

Meticulously researched and evocatively written, *Cutting for Stone* simultaneously emphasizes the significance of the empathetic patient-physician relation and the art of the hands-on physical medical exam, the layered complexities of structural and systemic frailties within challenging social and political contexts, and the power of narrative to illuminate and disrupt assumptions underlying the privileging of different kinds of medical education (western vs. non-western) and different modes of knowledge production (humanistic methods vs. scientific methods). The concerns raised by the social scientific approach of Metzl and Hansen's structural competency concept and the quantitative analysis provided by the SSAMSS converge in the medical humanist work of Verghese's novel, providing muscular, narrative flesh for the sturdy but inadequate data-driven bones of the health industry's body of knowledge. Empirical data, sociological analysis of systems, and the expansive, complex narratives of individual and community experiences of health are all needed to see the bigger picture of interlocking systemic challenges to equitable health care.

Thus, Verghese's novel portrays a vision of Ethiopia—a synecdoche for all of sub-Saharan Africa—and of medical education and practice in the context of structural frailty that belies the stereotypical images of Africa and Africans as utterly benighted and of their medical training and practices as profoundly deficient. While structural frailties do abound, the deficiencies reside in the larger political and medical infrastructures, not in the competencies of the health care practitioners. Missing is understaffed and underfunded, dependent on the charitable giving of churches abroad that

have little to no understanding of the needs of the community they seek to help. For instance, when the trained medical staff at Missing is reduced by 50% after the death of Sister Mary Joseph Praise and the defection of Thomas Stone, transnational donors wish to allocate donated funds to a new operating theater named after Stone rather than to areas of more basic and pressing need, such as catheters, syringes, penicillin, and other basic medical supplies that will sustain the single surgical theater already in existence. Matron, the clinic administrator who works tirelessly to keep the doors of the Mission open, relates the disconnect between well-intentioned charitable giving and the material needs of the clinic in a discussion with Elihu Harris, a patron from a church in Houston, Texas:

> "We have more English Bibles than there are English-speaking people in the entire country... I think some are from your Sunday-school children. We need medicine and food. But we get Bibles." Matron smiled. "I always wondered if the good people who send us Bibles really think that hookworm and hunger are healed by scripture?" (188–89)

Guiding Harris through the wards of the clinic and poignantly pointing out that Bibles do not heal "hookworm and hunger," Matron chronicles the everyday preventable illnesses in the patients that will cause death or debilitation because of the lack of funding for the Mission. As they leave the ward, she explains in plain and simple terms: "What we are fighting isn't godlessness—this is the most godly country on earth. We aren't even fighting disease. It's poverty" (191–92).

Political unrest makes it difficult for doctors to peaceably practice medicine as well. Eritrea's protracted and embattled efforts to win independence from Ethiopia serves as the ongoing political backdrop for the majority of Marion and Shiva's formative and adult years. Escalating tensions over post-World War II moves by the United Nations that ceded control of Eritrea to Ethiopia resulted in a series of conflicts that eventually erupted into civil war in the 1970s, with Eritrea fighting for its independence. Additionally, other ethnic groups also began to press their claims for independence (441–442). Ghosh—Marion and Shiva's adoptive father—rendered guilty by association, was imprisoned for having treated a general who attempted to overthrow the reigning leader. Years later, Marion is similarly implicated by association in a childhood friend's hijacking of an Ethiopian Airlines plane as part of the rebellion of the Eritrean People's Liberation Front, one of the revolutionary groups

fighting for independence from Ethiopia. These parallel fates point to the clear challenges that political instability poses to the medical professional's mandate to heal the sick. Doing so can put one at risk of political backlash at best, and can possibly result in wrongful imprisonment or death at worst.

When Marion learns he has been wrongly named as a co-conspirator, he must leave the country to avoid torture and imprisonment (441). Tipped off by a security officer with a soft spot for Missing, Marion learns he has been targeted and leaves the country just short of completion of his medical internship. Marion's case dramatizes the ways regional destabilization and civil unrest disrupt the capacity of students to learn, doctors to heal, and already frail medical institutions to sustain themselves; they are neither isolated nor immune from the political milieu in which they operate. Marion expatriates to the United States to complete his medical training, while Shiva remains at Mission to continue his community-based practice under the tutelage of Hema.

Verghese's depiction of Marion's postgraduate training in the United States reveals the unevenness of medical education in the United States. His arrival having been paved smoothly by Elihu Harris, the misguided minister from Texas previously mentioned, Marion discovers that his internship at Our Lady of Perpetual Succour, which services a mostly black and Latino population, cannot attract American medical students and is staffed by foreign medical graduates who, if they stay on in the United States after their medical residency, are sent to rural and underserved areas where many American doctors refuse to go (471). Though a technologically advanced facility compared to Missing, Our Lady is a poor hospital by US standards that services the poor. It lacks the resources of university hospitals or private practice hospitals visited by the wealthy and insured. They possess a helipad, but it is owned by the neighboring wealthy hospitals to harvest the organs of "good for parts only" patients: otherwise young and healthy bodies that are brain-dead from gunshot wounds or other violent crimes (478). While Our Lady is understaffed as well, it is supported by Medicaid and Medicare precisely to develop internship and residency training programs for foreign nationals to staff because most American doctors do not want to work in poor hospitals in bad neighborhoods (491). Further, because Our Lady is under-resourced in numbers of interns, resident physicians, and faculty for the level of patient volume they handle, the medical training program is placed on probation and the medical interns are forced to find other institutions where they can complete their training.

Thus, Marion's education in the United States highlights a two-tiered medical education and health care delivery system that appears to be resilient for the wealthy and insured, but is clearly structured inequitably, highlighting the frailty of poor hospitals and vulnerability of poor communities in the United States. Furthermore, the wealthier hospitals in Verghese's depiction appear to have a degree of dependency upon the poorer hospitals if for nothing more than organ harvesting. This grisly arrangement demonstrates the structural violence of the US health care system and its similarities to the conditions for the poor in Ethiopia.

While Marion goes on to do well in his training despite the inequitable structural challenges in the United States, it is the story of how Ghosh, Hema, and Shiva continue to innovate treatment and health care delivery in spite of—or perhaps because of—local structural frailties that are most compelling. Verghese depicts an enthralling image of the strength, resilience, and innovation of learning and practicing medicine in Ethiopia through the practice of Ghosh, Hema, and Shiva. Ghosh represents a practitioner who possesses a host of assessment and diagnostic skills, emphasizing bedside exam and clinical skills that rely on close observation and an intimate knowledge of the patient—skills which, in more developed and generously funded settings, are often unnecessarily performed by expensive technologies. Ghosh manages to publish prolifically on a form of relapsing fever endemic to Ethiopia, of which he had the opportunity to observe more closely than any other living person (416).

Likewise, Shiva, who stayed at Mission to work alongside Hema in focusing on community-oriented health issues, is profiled in the *New York Times* as the "world's expert and the leading advocate for women with vaginal fistula" (575). Even prior to Marion's departure, Shiva, whose formal training comprising primarily an apprenticeship to Hema, had been working to radically improve surgical outcomes for women suffering from vesicovaginal fistula, a severe infection of the vagina and bladder resulting from protracted, obstructed labor. Verghese's empathetic description of the typical onset of this condition, which affects a disproportionate number of women in developing countries, fleshes out the clinical definition with a cultural and social description of the condition. Marion reflects on the case of a young girl they had observed in their youth who came to Missing with her head bowed in shame, urine dribbling down her legs, and carrying about her an "unspeakable odor." He describes in detail the combined complicating factors of the girl's youth at marriage, the painful consummation of her marriage—especially if she had been circumcised—and

the impossibility of a baby to pass through a small pelvic inlet rendered even smaller by rickets, a vitamin D deficiency indicative of general malnourishment. Unable to pass through the vaginal canal, the baby dies inside the womb—an outcome preventable with access to a hospital where a Cesarean section could be performed. Often times, the mother dies as well due to a ruptured uterus or infection and septicemia (424).

The cultural practices of marrying girls off to give birth at a young age, and the culturally validated practice of female circumcision, might, under the cultural competency model, imply that the ills with which this young girl struggles are a purely social and cultural challenge to be navigated. However, the structural challenges exacerbate this young woman's condition, as indicated by most families' inability to transport the mother to a health center where the fetus could be removed (424). Should the mother survive labor and the removal of the dead fetus, the aftermath of this instance of preventable infant mortality goes on to have devastating outcomes for the mother. The sloughing off of dead and gangrenous tissues inside the birth canal creates a jagged hole where urine passes directly into the vagina, causing infection in the urine, bladder, labia, and thighs that produces the persistent, shame-inducing foul order (425–26). Consequently, women with this condition experience social death. Their husbands cast them off; they become outcasts in their communities due to their unbearable odor and status as failed mother and woman. Sometimes their own birth families will not take them back. The consequences for lack of access to medical interventions such as Cesarean section or treatment for the fistula go beyond the life and death of individuals. Rather, as displayed by Verghese, structural frailty has implications for the health of the entire community when such instances of female and infant mortality occur despite the existence of preventive treatment.

The infrastructural challenge of insufficient numbers of hospitals and clinics delimits access to medical interventions that help to prevent the onset of fistula in the first place, like Cesarean sections. In the face of such challenges, Hema and Shiva's innovations in repairing fistula shift to address the physical and emotional trauma faced by women with this condition. The major intervention in the increased success of repairing fistulas without recurrence is credited to Shiva's observation that the women had to be cared for medically and their bodies nourished holistically prior to surgery for a more successful outcome. Improvement in the women's general health includes a high-protein diet with vitamin supplementation, antibiotic treatment for infections, and exercise to strengthen their bodies

prior to surgery. His simple and effective solution of treating existing health issues first demonstrates how close observation and focus on overall patient health and well-being become practical medical necessities in structurally frail environments. This primary focus on holistic care incorporates nutrition and exercise from the outset as opposed to treating it as an afterthought or additive measure. Such strategies must be the normative standard for such economically impoverished environments, whether they occur in rural Ethiopia or the inner cities of the United States.

Cutting for Stone effectively highlights the complex intersections of various structural challenges within Ethiopia and similarly structurally frail environments. From the national political climate of civil war, to the ideological and political decision to leave health care in the hands of underfunded and unsupported charitable organizations, to embedded cultural practices and beliefs that are slow to change, the novel captures the complexities of health care delivery in a structurally frail context even as it displays the innovations and achievements possible because of the community-oriented methods applied. In order to develop structural competency as a strategy that embraces diversity and promotes inclusion in health care systems from education of doctors to delivery of care, we must avail ourselves of the tools of storytelling and narrative analysis that permit us to more richly analyze the way that social, political, and economic structures produce health challenges and inequities.

"WHERE SILK AND STEEL FAIL, STORY MUST SUCCEED"[2]

Humanity exists in a web of mutual interdependence wholly of our own making that cannot be escaped. We must begin to acknowledge this if we are to achieve not only an embrace of diversity and a practice of inclusivity, but an ultimate goal of equity, especially in our health care systems. Narrative methods demand that we attend to the human dimensions, and the interpersonal dimensions, that form the foundations of our social, political, and economic systems. The quality of these human relations determines the frailty or resiliency of our health systems.

Indeed, how might inequities in US-based health care be transformed were we to incorporate as a matter of course community-based, structurally competent strategies into our health care system across the board? How might sub-Saharan Africa benefit from maintaining these methods and embedding them into the growth of government planning and infrastructural development? In the United States, Metzl and Hansen cite

some programs utilizing similar strategies as representative of a structural competency curriculum. They cite the Health Leads program in Boston, where resource desks in waiting rooms of urban health centers "prescribe" basic resources such as food assistance and heating fuel subsidies which Health Leads' volunteers "fill" (2014: 130). In Tennessee, by bringing mobile markets to the communities, medical students help patients comply with instructions to take their pills with food, by addressing the structural problem that these patients face in accessing grocery stores (Metzl and Hansen 2014: 131).

Yet, in the United States, these strategies are more the exception than the norm. And while it is not clear as yet to what degree all sub-Saharan medical schools have fully institutionalized problem-based practice and community-based health practices, there are promising examples of methodologies that medical schools in the United States could learn from. Strengthened and more robust partnerships, exchanges, and internships between US medical institutions and African medical schools would move both well beyond the crisis-oriented response of *Médecins sans Frontières* [Doctors Without Borders], whose work, while valuable in terms of responding to communities vulnerable to epidemic in acute moments of medical blight, does not—nor, I acknowledge, does it purport to—ramp up the capacity of African countries to train and retain their own doctors and expand medical delivery more broadly across the landscape.

Structural frailty gives rise to strategies of structural competency in sub-Saharan Africa, just as the increased awareness of the medical system as systemically, structurally violent demands attentiveness to structural competency in the United States. Africa has a unique opportunity to build equitable and just health care delivery systems *at the moment* when sociopolitical, economic, and infrastructural capacities are being designed and policies are being implemented. In this sense, medical professionals and government officials in Africa may have the slightly easier part as compared with their US peers, who have to work to remediate entrenched violences built into the structures of the system, structures that work to reproduce themselves. To that end, the knowledges, competencies, and skills that each brings can prove beneficial to the efforts of both.

NOTES

1. I propose the term structural frailty to refer to the fragility of the *systems and structures* of the *institution* of medicine. This is distinct from James Quesada et al.'s (2011) notion of structural vulnerability, which focuses on the experiences of individuals in their interactions with structures that leads to diminished health behaviors and/or help-seeking behaviors.
2. Verghese 2012: 10.

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