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Structural Vulnerability: Operationalizing the Concept to Address Health Disparities in Clinical Care

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Abstract

The authors propose reinvigorating and extending the traditional social history beyond its narrow range of risk behaviors to enable clinicians to address negative health outcomes imposed by social determinants of health. In this Perspective, they outline a novel, practical medical vulnerability assessment questionnaire that operationalizes for clinical practice the social science concept of "structural vulnerability." A Structural Vulnerability Assessment Tool designed to highlight the pathways through which specific local hierarchies and broader sets of power relationships exacerbate individual patients' health problems is presented to help clinicians identify patients likely to benefit from additional multi-disciplinary health and social services. To illustrate how the tool could be implemented in time- and resource-limited settings (e.g., emergency department), the authors contrast two cases of structurally vulnerable patients with differing outcomes. Operationalizing structural vulnerability in clinical practice and introducing it in medical education can help health care practitioners think more clearly, critically, and practically about the ways social structures make people sick. Use of the assessment tool could promote "structural competency," a potential new medical education priority, to improve understanding of how social conditions and practical logistics undermine the capacities of patients to access health care, adhere to treatment, and modify lifestyles successfully. Adoption of a structural vulnerability framework

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in health care could also justify the mobilization of resources inside and outside clinical settings to improve a patient's immediate access to care and long-term health outcomes. Ultimately, the concept may orient health care providers toward policy leadership to reduce health disparities and foster health equity.

Medical students commonly learn—sometimes through the so-called hidden curriculum—that taking a social history involves routinely asking about a narrow set of risk behaviors, including alcohol, tobacco, and illicit drug use, sexual history, intimate partner violence, and depression.[1] Although many doctors and health care professionals intuit that “the social” is an arena of great importance in a patient's ability to adhere to treatment, addressing the structural impediments to health is, nonetheless, generally considered to lie outside the purview of everyday clinical practice. As Srivastava explains, “Social history is often treated as an optional extra, relegated to the social worker in case of real need.”[2(p588)]

We propose to reinvigorate the traditional social history and extend it beyond the current narrow range of risk behaviors to enable clinicians to address negative health outcomes imposed by poverty, inequality, and discrimination. In this Perspective, we outline a novel, practical medical vulnerability assessment questionnaire that operationalizes for clinical practice the social science concept of “structural vulnerability”[3–6] (see Table 1 for definitions of key terms). The questions are framed around crucial domains of societally imposed risk factors that may exacerbate a patient's health outcomes. We propose using this tool to facilitate the development of a comprehensive treatment plan that engages a multidisciplinary health care team capable of working in concert with service providers outside the clinic. To convey the clinical utility of the concept of structural vulnerability and to illustrate how our tool could be implemented in time- and resource-limited settings, we contrast two cases of patients who presented to the San Francisco County hospital's emergency department with wounds from interpersonal violence, trapped in destructive cycles of chronic morbidity, substance abuse, high utilization of emergency care, and frequent hospital admissions.

The Development of the Concept of Structural Vulnerability

In the United States and globally, health care professionals and social scientists have repeatedly noted the urgency of the challenge to address what public health calls the “social determinants of health.”[7–10] In the United States, a history of discrimination and ineffective health care for cultural minority populations—from Native Americans in rural areas to African Americans and Latinos in segregated inner-city neighborhoods to refugees from war-torn countries—has spawned medical and social science critiques of clinical assessments based on stereotypes around race, class, gender, sexuality, or citizenship that contribute to disparate clinical care and outcomes.[3,6–11] For example, studies show that African Americans and women receive treatment for myocardial infarctions less often than white men, even when they report identical symptoms in emergency departments.[12,13] A large social science literature has documented the ways in which subtle cultural and normative markers, such as accent, body posture, and etiquette, can interface with demographic categories (race/ethnicity, age, gender, social class) to create hierarchical

judgments that promote social inequality and potentially limit an individual's opportunities for security and achievement in any given society.[14] These subtle symbolic demarcations of hierarchies may influence perceptions by clinical and social service providers as well as by the larger society about the type of care considered appropriate for an individual or a social group, creating a potential stigma of differential "health-related deservingness."[15]

In response to these challenges, in the late 1970s U.S. health care educators sought to promote "cultural competency" to ameliorate racial and ethnic disparities in health outcomes.[16–18] Medical education incorporated the concept of cultural competency to sensitize health care practitioners and systems to the needs of diverse individuals and communities whose beliefs, values, and customary practices often differed from those of the medical professionals serving them. Cultural competency, however, has been critiqued for inadvertently compounding cookie-cutter stereotyping of diverse patients.[3,17–19] Furthermore, in practice it has tended to focus primarily on cultural barriers to care framed in terms of race and ethnicity, often neglecting the negative health effects of political and economic forces—especially socioeconomic status—that compound discrimination.[7–9]

In the early 1990s, infectious disease physician and anthropologist Paul Farmer warned that concentrating exclusively on "culture" misrecognizes the pathological effects of social inequality.[20] He eloquently brought the political science and human rights concept of "structural violence"[21,22] to clinical attention by documenting the ways in which policies, market forces, and institutional arrangements disproportionately shorten the lives of the poor. His work reinvigorated the field of global health and enlivened a generation of idealistic health professions students and clinicians to mobilize practically and politically for the transfer of medical resources to resource-poor nations and underserved domestic populations. Importantly, the concept of structural violence has been instrumental in defining access to health care as a human right.[9]

Because of these efforts, many clinicians have become aware of the negative health effects of political and economic forces outside the clinic. Many, however, feel helpless in the face of these social structural forces and consider them to be beyond the purview of clinical practice. Others interpret non-adherence to treatment protocols and inability to pursue healthy lifestyle modifications to be the willful moral choices of their patients rather than effects of social structural inequalities. As a result, clinicians sometimes become frustrated by their patients or subject to burn-out. The social science theorizing and debates on these topics are too complex—and potentially arcane for a clinical audience—to be treated fully here. Nevertheless, the assessment tool we present builds on this critical social science work, as well as on Farmer's applied engagement with social inequality and global health disparities, to help clinicians articulate and address the effects of detrimental social structures on patient care.[3,23,24] We are responding to the call to promote what physician–social scientists have called "structural competency" in medicine.[25]

To address this challenge practically, we designed a clinical assessment tool to operationalize the concept of structural vulnerability, by highlighting the pathways through which specific local hierarchies and broader sets of power relations may exacerbate an individual patient's health problems. Our goal here is to facilitate an applied pragmatic

approach to intervening on these forces by identifying obstacles to healthy lifestyles and treatment adherence outside the clinic and facilitating access to care inside the clinic. We begin with the awareness that all individuals live within diverse but identifiable power relationships and hierarchies that can limit access to resources and can shape their decision-making and behavior in ways that are sometimes beyond their capacity to control or change without extra support.

Our application of the social science concept of structural vulnerability to medicine takes the social determinants of health perspective as a foundation and builds on the wider range of critical social science of medicine and public health theory—highlighted by terms such as "structural violence," "racial disparities in health," "eco-social models of health," "upstream factors in health," "fundamental social causes of health," and "social suffering"[7,8,26–31]—to expand and define more practically the diversity of forces, both external and internal to the clinical encounter, that can sabotage the health of patients regardless of the conscious intentions of the caregiver or the patient. Structural vulnerability is produced by one's location in a hierarchical social order that is embedded in diverse networks of power relationships and effects.[32,33] An earlier conceptualization focusing on the challenges faced by Latino migrant laborers noted that marginalized and pariah populations are important examples of those affected by structural vulnerability, including "the poor, the medically uninsured, the sexually stigmatized … [culturally subordinated] ethnic minorities, the disabled, the formerly incarcerated, the drug addicted, runaways… ."[3(p346)] In sum, a patient's structural vulnerability is the outcome of a combination of socioeconomic and demographic attributes (gender, socioeconomic status, race/ethnicity, sexuality, citizenship status, institutional location), in conjunction with assumed or attributed status (including health-related deservingness, normality, credibility, assumed intelligence, imputed honesty). Policy trends, such as mass incarceration or zero tolerance in law enforcement, can exacerbate these markers and hierarchical ideological classifications to position individuals differentially within specific political, economic, and legally sanctioned institutional sites in ways that limit many aspects of life, including health outcomes.

A Structural Vulnerability Assessment Tool for the Clinical Encounter

Awareness of structural vulnerability is not enough. Health care practitioners facing time constraints and inadequate access to social service resources often feel overwhelmed by their patient load. In Chart 1, we present an assessment protocol consisting of initial screening questions followed by qualitative assessment probes to help clinicians quickly gauge aspects of a patient's structural vulnerability. We designed this tool to guide priorities for immediate intervention and follow-up support strategies in order to move beyond simple recognition of problems. We are building on the practice of utilizing validated screening instruments in the clinic to flag problems such as substance abuse, mental health challenges, and intimate partner violence.[34–36] Recent applied health services literature suggests that the administration of short procedural checklists at strategic clinical contact points (from outpatient vaccine clinics to intensive care units) can result in more appropriate caregiving.[37]

Our initial screening questions flag domains representing common social structural and institutional obstacles that can place a patient at risk for recurring negative health outcomes.

A treatment plan based on structural vulnerability assessment may include immediate resource allocation and connection to further services and advocacy in addition to further medical tests and prescriptions. Consider a hypothetical example of a patient presenting with chest pain. Instead of simply ruling out myocardial infarction and attributing the pain to cocaine use, medical service providers could identify the patient's structural vulnerabilities and mobilize resources outside the clinic to address the patient's ongoing daily triggers for cocaine use, such as the patient's homelessness in an inner-city environment that is characterized by chronic open-air drug sales and use.

In practice, clinicians will need to adapt the vulnerability assessment protocol to their patient populations, clinical institutional setting (e.g., hospital emergency department, outpatient clinic, inpatient ward), and surrounding community resource base. Health care practitioners, consequently, will retain clinical decision-making authority and use their judgment to apply insights from the assessment to the challenges faced by their individual patients in reference to their locale. Our assessment tool supplies an anchoring qualitative guide for flexible, onsite adaptation with further strategic probes to identify the most crucial practical domains that an individualized treatment plan or patient problem list needs to address. The weight of the relevant domains will differ across nations, regions and neighborhoods.[38,39]

Our protocol could also be operationalized quantitatively. In some institutional settings, adapting this assessment tool so that it becomes a numerical checklist could have the advantage of creating a quick index of patient vulnerability—pragmatically equivalent to an objective "structural vulnerability diagnosis"—as a means to advocate for the allocation of limited resources. Elevated vulnerability scores within specific domains, for example, could enable timely triage by clinicians to justify distribution of vouchers for clothing, shelter, food, legal services, rehabilitative therapies, and mental health and substance abuse treatments. Dispensing these extra social services and practical survival resources could become as legitimate and routine to the purview of medical practice as blood draws, pulse-taking, medical tests, and medication prescriptions. At the same time, clinicians and administrators must be wary of the danger that the simplicity or rigidity of quantifiable variables could limit the critical and creative thinking necessary for addressing complex social determinants of health in the urgency of a given context. A quantitative screen could become just one more bureaucratic hoop to jump through for health care practitioners. Our qualitative version of the assessment tool (Chart 1) represents, nonetheless, an appropriate starting point. It should be considered a draft for local adaptation.

A secondary but important goal of our proposed clinical-encounter tool is to improve the relationship of practitioners to their surrounding communities by increasing awareness of the importance of identifying or developing community-based social service resources in response to patient needs. For example, if clinicians at a given institution see a pattern of high rates of alcohol use disorders in their patient population, they could either refer patients to existing community-based organizations or build programs designed to serve this population's needs.

Implementation of the structural vulnerability assessment tool requires the formation of interprofessional health care teams and coordination with community stakeholders. Over the

longer term, use of the tool should promote collaborative institutional practices emphasizing accessible primary health care, accountable medical leadership, family and community participation, and expanded roles for community health workers or peer advocates/ accompagnateurs.[24]

"Chronic Acute Care" in the Emergency Department: Two Cases

To illustrate how our structural vulnerability assessment tool could work in practice, we contrast two cases of structurally vulnerable patients who presented to the San Francisco county hospital with wounds from interpersonal violence but had divergent outcomes. The first case highlights lost opportunities for deploying the tool in a clinical setting with limited time and resources. The second case shows how the tool could be implemented through the collaboration of interdisciplinary health care teams.

Case 1: Deploying the structural vulnerability tool within time and resource constraints

MT* is a 44-year-old Mexican undocumented day laborer with a history of hypertension, hyperlipidemia, and osteoarthritis. He presents to the emergency department with a broken nose and a black eye. He smells of alcohol and has a belligerent affect. The first person to see him after the triage nurse is a white female emergency medicine physician who has treated MT before for similar complaints related to physical trauma. MT is routinely admitted to the county hospital for acute inpatient care and then discharged back to the streets after several days, only to repeat this cycle of emergency department encounters and hospitalizations.

Upon MT's release from the hospital, the senior author (J.Q.) wrote the following anthropological field note:

> [MT] comes to the Day Labor Program [a program supporting day laborers in a neighborhood near the hospital] with a bandage on his head and his face is swollen. He was discharged yesterday after two nights of hospitalization with prescriptions for: 1mg/daily Folic Acid; 100mg/daily Thiamine/Vitamin B1. He holds up an unsigned prescription form with the medication Naltrexone scrawled on it and asks me, shrugging quizzically, "They think all these medications are good for my alcoholism?"
>
> He is too agitated to let me answer, telling me that last night he slept on a slab of cardboard in the alcove of [a theater] with an acquaintance. They were rousted in the middle of the night "By a wild crazy man." Early this morning MT learned the man who shared his cardboard was found dead with his throat slit. He is scared the police are trying to find him for questioning and potential deportation. Another day laborer tells MT to "shut up." MT shouts back angrily, but then runs away frightened.

The field note highlights MT's immediate everyday survival emergencies (fear of law enforcement, propensity for rage, homelessness, and violence) that prevent him from engaging with the ambiguous and impractical follow-up care noted only semi-legibly on his prescription from the hospital.

Health care staff may feel frustrated working with MT and other chronic utilizers of the emergency department, sometimes referred to derogatorily as “frequent flyers,”[40] as they watch the health of these patients deteriorate between multiple cycles of urgent care visits. If the average cost of an emergency department visit for an uninsured patient is $1,178,[41] and the cost of one inpatient night in a California government-funded hospital is $2,590,[42] MT's monthly average toll of 1–3 nights of hospitalizations would cost well over $100,000 annually. Could such expenditures be allocated more effectively if the medical discharge treatment plan were to include housing and food vouchers, more appropriate and robust counseling, and case management along with substance abuse rehabilitation?

In the short time at her disposal, MT's physician could pose our tool's initial screening questions during the social history intake to rapidly identify the salient parameters of his structural vulnerability that are most proximally propelling him to repeat cycles of homelessness, binge drinking, and violent encounters. In an ideal scenario, the physician might use the qualitative probes to gain a better understanding of MT's typical daily activities in one or more of the tool’s eight domains: his income generating strategies (financial security); how and where he eats (food access); whether he has helpful or disruptive friends and family (social network); if law enforcement may be pursuing him (legal status, discrimination); where he sleeps and his perception of physical safety (residence, risk environments); and his functional health literacy (education).

By doing so, MT’s physician might learn that MT has no formal education beyond sixth grade and has been undocumented in the United States for 15 years. She might discover MT has a girlfriend--who is alcoholic and generates income through sex work--with whom he moves between homelessness and temporary shelters. She might find out that he has an aunt in a nearby town who occasionally houses him and holds his mail as well as one adult daughter who lives nearby but has not spoken to him in five years. The physician might recognize that MT understands he has high blood pressure but cannot afford his medication co-pays. MT might admit he is a recurrent victim of street violence and that he binge drinks, is unable to escape chronic environmental exposure to alcohol and drugs in shelters and on the street, and is unable to manage outbursts of drunken anger. MT might describe a history of heavy repetitive manual labor and tell her that he receives no public subsidies and only unstably earns $100 a week through the municipal day-laborer cooperative on odd jobs that exacerbate his arthritis pain and inflame his chronic occupational injuries of muscle and joint strain. This information might help MT’s physician interpret how his drinking and propensity for rage mask his sense of failure in his expected male role to provide for his girlfriend, who recently filed an order of protection against MT.

The time constraints faced by emergency department providers would likely oblige the physician to abbreviate her probing. She could, however, within a few minutes screen MT as positive on multiple domains of structural vulnerability (financial security, residence, risk environments, social network, and discrimination) as well as document the more common social history risk variables of alcohol/tobacco dependence and intimate partner violence. Her intervention priorities for his problem list would need to balance MT's overlapping medical and social needs with available resources. If housing instability appears to be the most proximal reason for MT's chronic exposure to street violence and alcohol, she might

prioritize access to stable housing followed by anger management counseling and substance abuse treatment or occupational therapy, pain management, and outreach to kin. Most immediately and practically, she might ensure MT leaves the hospital with his prescriptions filled and a list of alcohol rehabilitation programs--or at least a pamphlet schedule of local Alcoholics Anonymous meetings. In the longer term, the physician might explore partnerships with the nearby day-laborer cooperative to support establishment of peer-led substance abuse treatment, anger management counseling, and/or occupational therapy programs as well as potential changes to city policies for housing and services for undocumented immigrants.

Case 2: Successful engagement with structural vulnerability by multidisciplinary teams

CW is a 22-year-old African American man with paraplegia related to a police-inflicted gun-shot wound from a gang-related incident. He has been hospitalized repeatedly for debridement and wound repair complications. He has most recently been seen in the emergency department for a new gang-related gunshot wound.

At the time of CW's last emergency department visit and hospitalization, the county hospital was running a High User Case Management program in which an interdisciplinary team of health care practitioners coordinated the care of structurally vulnerable patients. While he was hospitalized, CW was quickly referred to the High User team. The team documented that CW was living out of his car in his former gang's territory, with no access to wheelchair-accessible housing. They helped obtain a respite bed prior to his hospital release while they processed a Section 8 housing application for him in a neighborhood distant from gang territory. They also documented how CW's second gunshot wound was complicating his gang-related legal sanctions and they preemptively liaised with the courts "to find an equitable sentence and probation that allowed him to also attend to his [outpatient] medical issues."[43(p6)] Furthermore, they sought out a primary care physician to coordinate CW's medical follow-up, including plastic surgery and orthopedics, as well as income support services for his daily living needs, paratransit vouchers, and medication delivery.

CW's case provides an example of how clinicians can, through multidisciplinary clinical team engagement with strategic external institutions and services, address complex social challenges outside the clinic that threaten a patient's health outcomes. CW's case was presented in the High User program's 2005 annual report[43] as an example of a socioeconomically complex clinical case history that was amenable to improvement in quality of care and outcomes through the county hospital's initiative for repeatedly hospitalized patients. (See also the discussion in Messac et al.[23])

The High User program began in 2001 to reduce hospital recidivism by addressing the "biopsychosocial needs" of high-utilizer patients through an intensive case management model. Located in the County of San Francisco's only safety net hospital and level 1 trauma center, the High User program was designed to serve indigent patients hospitalized three times or more within the past year. In 2004, two-thirds of these patients were homeless or unstably housed, 70% had concomitant mental illness, and 80% had alcohol and substance use problems.[23,43]

The High User program was justified to administrators as reducing long-term costs by improving patient outcomes through streamlining the coordination of high-tech medical care and social services provision.[44] Each patient was assigned an interdisciplinary team (social worker, public health nurse, psychiatrist, primary care physician, and clerk) that met twice weekly to formulate individualized treatment plans. The team's priority was to connect patients to safe housing, employment or public income subsidies, transportation, and community-based primary care clinical and social services.

The High User program's success with CW's case demonstrates the ability of clinicians to engage productively with diverse institutional services outside the hospital to address structural vulnerability domains. The multidisciplinary clinical team proactively applied for public housing for CW in a safe neighborhood (residence, risk environment) and communicated with the courts to contravene the contradiction between law enforcement and health priorities (legal status, discrimination). Through their efforts, they helped break the destructive cycle of gang violence for CW, which clinicians taking a narrow medical focus might have considered to be beyond their purview. With this level of support, CW adhered to wound care and rehabilitation and transitioned to non-violent "OG" (original gangster) status in the community.

The U.S. Policy Environment: Cost-Benefit and Outcome Measures

Bipartisan political concern for reducing health care costs has enabled the development of innovative comprehensive care programs to serve complex high-utilizer patients. Such initiatives exist across the United States, in cities such as Detroit, Michigan, Baltimore, Maryland, Camden, New Jersey, and Allentown, Pennsylvania.[45–48] In 2013, the Center for Medicare and Medicaid Innovation funded 24 Health Care Innovation Awards for three-year implementation studies to address care coordination, improve transitions between health care settings, and develop comprehensive multidisciplinary health care teams and innovative practice designs, like patient-centered medical homes, to avoid re-hospitalizations or emergency room visits.[49] While these initiatives are often justified as cost-saving as well as effective for structurally vulnerable patients, administrative annual budget processes can overlook the benefits of these programs and eliminate them despite their delivery of high-quality care. For example, the High User program that enabled CW's positive outcome was cut after 7 years, during a dot-com bust in the San Francisco Bay Area.[50] The program no longer existed at the county hospital when MT was hospitalized.

Despite the possibility of contradictions between meeting cost-saving priorities and achieving optimal health care outcomes for structurally vulnerable patients, the practical effect of integrating our assessment tool into clinical practice can be evaluated quantitatively through both standard health indicator outcomes data and inter-institutional monitoring of hospitalization re-admissions, outpatient follow-up, and emergency department usage to demonstrate cost-benefit outcomes utility. Interviews, surveys, and ethnographic case studies of patient quality of life and health care worker satisfaction could provide greater qualitative context to help interpret the quantitative outcomes. Qualitative data could be especially useful for adapting new programs designed for structurally vulnerable patients to make them more effective and for mitigating cost-accounting reductionism or statistical insensitivity to

quality of care measures. Such data could also be used to evaluate the sustainability of these initiatives from the health care practitioner's perspective.

Integrating Structural Competency Into Medical Education

The immediate goal for our proposed structural vulnerability assessment tool is to provide a quick screening evaluation that will enable health care practitioners to prioritize a comprehensive treatment plan that interfaces with resources outside the clinic. Unlike most assessment instruments commonly used in clinical medicine,[34–36] the structural vulnerability assessment tool brings crucial social structural variables--such as poverty, discrimination, legal status, and, more abstractly, inequality, hierarchy, and power relations--into focus for health care practitioners. Our tool is a strategic practical heuristic mechanism designed to promote an understanding of how social conditions and practical logistics can undermine the capacities of patients to access health care, adhere to treatment, and modify lifestyles successfully.

Training in how to adapt and apply the tool to local clinical settings could become a building block for a new, or supplemental, “structural competency” in clinical education and certification. This new competency could be integrated into existing medical school pre-clinical curricula on professionalism, the doctor–patient relationship, and history-taking, as well as in electives on ethics, social medicine, and global health. To this end, locally adapted drafts of our tool, as well as independently initiated programs, have been, or are being, piloted in curricula in medical schools, public health graduate programs, hospital-based residency programs, and continuing medical education courses, and in community-based and hospital-based clinics. Participants in such initiatives include the University of California, San Francisco; University of California, Berkeley; University of California, Los Angeles; Samuel Merritt University; Highland Hospital (Oakland, California); Santa Rosa Family Medicine Residency (Santa Rosa, California); Oregon Health and Science University; University of Pennsylvania; New York University; New York Medical College, Vanderbilt University's Center for Medicine, Health, and Society; and the State University of New York at Albany.[51–60]

The concept of structural vulnerability lends itself to integration into medical education across several of the eight domains of general physician competencies outlined by Englander et al[61] as part of an Association of American Medical Colleges (AAMC) Competency-Based Learning and Assessment project. It complements “systems-based practice,” defined as “demonstrat[ing] an awareness of and responsiveness to the larger context and system of health care, as well as the ability to call effectively on other resources in the system to provide optimal health care.”[61(p1092)] It addresses “knowledge for practice” by enhancing clinician awareness of social-behavioral sciences, as described by Englander et al: “Apply[ing] principles of social-behavioral sciences to provision of patient care, including assessment of the impact of psychosocial and cultural influences on health, disease, care seeking, care compliance, and barriers to and attitudes towards care.”[61(p1091)] Finally, training in the clinical implementation of our tool has the potential to address competencies in the domains of “personal and professional development,” “professionalism,” and “interpersonal and communication skills.” We hope implementation of our tool in clinical

settings will also contribute to the growing national conversations on universal access to quality care initiated by the implementation of the Affordable Care Act.

Our assessment tool's final domain—discrimination—encourages a shift of the clinical gaze toward critical self-reflection on the stigma of being perceived as not deserving high-quality health care. This is meant to promote an empathetic awareness of the visible markers, as well as the contextual forces, that sometimes frustrate or alienate clinicians and lead them to blame patients for inflicting poor health on themselves. Teaching critical self-awareness and empathy for suffering is a challenging goal for medical education. Ideally, skill with implementing the tool in daily practice may improve the fluidity and effectiveness of the patient encounter, reduce both physician and patient frustration, and improve outcomes.

In Conclusion

Ultimately, addressing challenges related to social determinants of health requires the mobilization of resources. To this end, the development of a pedagogically and institutionally vetted structural vulnerability tool that has proven itself to be practical in the clinic might justify prescribing and developing social support services despite cost-cutting environments that have been reducing resources for the poor. Over the longer term, a new structural competency curriculum might also expand the vocation and imagination of clinicians toward taking greater political leadership in favor of reducing health disparities and fostering health equity.

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References

1. Holmes SM, Maya Ponte. En-case-ing the patient: disciplining uncertainty in medical student patient presentations. Cult Med Psychiatry. 2011; 35(2):163–182. [PubMed: 21590506]
2. Srivastava R. Complicated lives--taking the social history. N Engl J. Med. 2011; 365:587–589. [PubMed: 21848459]
3. Quesada J, Hart L, Bourgois P. Structural vulnerability and the health of Latino migrant laborers. Med Anthropol. 2011; 30(4):339–362. [PubMed: 21777121]
4. Bourgois P, Hart LK. The structural vulnerability imposed by hypersegregated U.S. inner city neighborhoods–a theoretical and practical challenge for substance abuse research. Addiction. 2011; 106(11):1975–1977. [PubMed: 21978310]
5. Holmes SM. Structural Vulnerability and hierarchies of ethnicity and citizenship on the farm. Med Anthropol. 2011; 30(4):425–449. [PubMed: 21777126]

6. Holmes, S. Fresh Fruit, Broken Bodies: Migrant Farmworkers in the United States. Berkeley, Calif: University of California Press; 2013.
7. Braveman P, Egerter S, Williams DR. The Social determinants of health: Coming of age. Annu Rev Public Health. 2011; 32(1):381–398. [PubMed: 21091195]
8. Marmot, M., Wilkinson, R., editors. Social Determinants of Health. New York: Oxford University Press; 2006.
9. Farmer, P., Kim, JY., Kleinman, A., Basilico, M. Reimagining Global Health: An Introduction. Berkeley, Calif: University of California Press; 2013.
10. Commission on Social Determinants of Health. Closing the Gap in a Generation: Health Equity through Action on the Social Determinants of Health. Geneva, Switzerland: World Health Organization; 2008.
11. Smedley, BD.Stith, AY., Nelson, AR., editors. Institute of Medicine. Unequal Treatment: Confronting Racial and Ethnic Disparities in Health Care. Washington DC: National Academies Press; 2002.
12. Lopez L, Wilper AP, Cervantes MC, Betancourt JR, Green AR. Racial and sex differences in emergency department triage assessment and test ordering for chest pain, 1997–2006. Acad Emerg Med. 2010; 17(8):801–808. [PubMed: 20670316]
13. Van Ryn M, Burgess D, Malat J, Griffin J. Physicians' perceptions of patients' social and behavioral characteristics and race disparities in treatment recommendations for men with coronary artery disease. Am J Public Health. 2006; 96(2):351–357. [PubMed: 16380577]
14. Bourdieu, P. Pascalian Meditations. Stanford, CA: Stanford University Press; 2000.
15. Willen S. How is health-related "deservingness" reckoned? Perspectives from unauthorized im/migrants in Tel Aviv. Soc Sci Med. 2012; 74(6):812–821. [PubMed: 21821324]
16. Kripalani S, Bussey-Jones J, Katz MG, Genao I. A prescription for cultural competence in medical education. J Gen Intern Med. 2006; 21(10):1116–1120. [PubMed: 16836623]
17. Good, M-JD., James, C., Becker, A., Good, B. Institute of Medicine. The culture of medicine and racial, ethnic and class disparities in health care. In: Smedley, BD.Stith, AY., Nelson, AR., editors. Unequal Treatment: Confronting Racial and Ethnic Disparities in Health Care. Washington DC: National Academies Press; 2002. p. 594-625.
18. Association of American Medical Colleges (AAMC). Cultural Competence Education for Medical Students. Washington DC: 2005. p. 1-19.
19. Tervalon M, Murray-García J. Cultural humility versus cultural competence. J Health Care Poor Underserved. 1998; 9(2):117–125. [PubMed: 10073197]
20. Farmer, P. AIDS and Accusation: Haiti and the Geography of Blame. Berkeley, California: University of California Press; 1992.
21. Galtung J. Violence, peace, and peace research. J Peace Res. 1969; 6(3):167–191.
22. Martin-Baro, I., Aron, A., Corne, S. Writings for a Liberation Psychology. Cambridge, Mass: Harvard University Press; 1994.
23. Messac L, Ciccarone D, Draine J, Bourgois P. The good-enough science-and-politics of anthropological collaboration with evidence-based clinical research: Four ethnographic case studies. Soc Sci Med. 2013; 99:176–186. [PubMed: 23664236]
24. Farmer, P. Partner to the Poor: A Paul Farmer Reader. Saussy, H., editor. Berkeley, California: University of California Press; 2010.
25. Metzl J, Hansen H. Structural competency: Theorizing a new medical engagement with stigma and inequality. Soc Sci Med. 2014; 103:126–133. [PubMed: 24507917]
26. Farmer P, Nizeye B, Stulac S, Keshavjee S. Structural violence and clinical medicine. PLoS Med. 2006; 3(10):1686–1691.
27. Krieger N. Theories for social epidemiology in the 21st century: An ecosocial perspective. Int J Epidemiol. 2001; 30(4):668–677. [PubMed: 11511581]
28. Krieger N. Epidemiology and the web of causation: Has anyone seen the spider. Soc Sci Med. 1994; 39(7):887–903. [PubMed: 7992123]
29. Krieger N. A glossary for social epidemiology. J Epidemiol Community Health. 2001; 55(10):693–700. [PubMed: 11553651]

30. Scheper-Hughes N, Lock MM. The mindful body: A prolegomenon to future work in medical anthropology. Med Anthropol Q. 1987; 1(1):6–41.
31. Kleinman, A.Das, V., Lock, M., editors. Social Suffering. Berkeley, Calif: University of California Press; 1997.
32. Leatherman T. A space of vulnerability in poverty and health: Political-ecology and biocultural analysis. Ethos. 2005; 33(1):46–70.
33. Watts M, Bohle H. The space of vulnerability: The causal structure of hunger and famine. Prog Hum Geogr. 1993; 17(1):43–67.
34. Bradley KA, Bush KR, Epler AJ, et al. Two brief alcohol-screening tests from the Alcohol Use Disorders Identification Test (AUDIT): Validation in a female Veterans Affairs patient population. Arch Intern Med. 2003; 163(7):821–829. [PubMed: 12695273]
35. Kroenke K, Spitzer RL. The PHQ-9: A new depression diagnostic and severity measure. Psychiatr Ann. 2002; 32(9):1–7.
36. Chen PH, Rovi S, Washington J, et al. Randomized comparison of 3 methods to screen for domestic violence in family practice. Ann Fam Med. 2007; 5(5):430–435. [PubMed: 17893385]
37. Haynes AB, Weiser TG, Berry WR, et al. A surgical safety checklist to reduce morbidity and mortality in a global population. N Engl J Med. 2009; 360:491–499. [PubMed: 19144931]
38. Castañeda H. Structural vulnerability and access to medical care among migrant street-based male sex workers in Germany. Soc Sci Med. 2013; 84:94–101. [PubMed: 23455375]
39. Shannon K, Strathdee SA, Goldenberg SM, et al. Global epidemiology of HIV among female sex workers: Influence of structural determinants. The Lancet. 2015; 385(9962):55–71.
40. Bourgois, Philippe, Jeff, Schonberg. Righteous Dopefiend. Berkeley: University of California Press; 2009.
41. Caldwell N, Srebotnjak T, Wang T, Hsia R. “How much will I get charged for this?” Patient charges for top ten diagnoses in the emergency department. PLoS ONE. 2013; 8(2):e55491. [PubMed: 23460786]
42. Oh J. Average cost per inpatient day across 50 states in 2010. Becker’s Hospital Review. [Accessed May 12, 2016] Published April 30, 2012. http://www.beckershospitalreview.com/lists/average-cost-per-inpatient-day-across-50-states-in-2010.html.
43. Schneidermann, M. Annual Report: High User Case Management Program (July 2003 to December 2004). San Francisco, California: San Francisco General Hospital; 2005.
44. Kushel M, Perry S, Bangsberg D, Clark R, Moss A. Emergency department use among the homeless and marginally housed: Results from a community-based study. Am J Public Health. 2002; 92(5):778–784. [PubMed: 11988447]
45. Williams BC, Paik JL, Haley LL, Grammatico GM. Centralized care management support for “high utilizers” in primary care practices at an academic medical center. Care Manag J J Case Manag J Long Term Home Health Care. 2014; 15(1):26–33.
46. Dattalo M, Nothelle S, Tackett S, et al. Frontline account: Targeting hot spotters in an internal medicine residency clinic. J Gen Intern Med. 2014; 29(9):1305–1307. [PubMed: 24830738]
47. Kaufman S, Ali N, DeFiglio V, Craig K, Brenner J. Early efforts to target and enroll high-risk diabetic patients into urban community-based programs. Health Promot Pract. 2014; 15(2 Suppl): 62S–70S. [PubMed: 25359251]
48. Neighborhood Health Centers of the Lehigh Valley. The Lehigh Valley Super Utilizer Partnership: Overview and Impact. Allentown, PA: Neighborhood Health Centers of the Lehigh Valley; 2015 Jun. http://nhclv.org/lvsupprogramreport/#Print%20Report [Accessed May 12, 2016]
49. Centers for Medicare & Medicaid Innovation. [Accessed May 16, 2016] Health Care Innovation Awards Round Two. https://innovation.cms.gov/initiatives/Health-Care-Innovation-Awards/Round-2.html
50. Schneidermann M. Professor, University of California, San Francisco School of Medicine. Personal email communication with P. Bourgois. Subject: History of High Utilizer Program and relationship to older pilot programs. October 2012.
51. Munyikwa M. Fifth-year MD/PhD student, University of Pennsylvania. Personal email communication with P. Bourgois. Subject: Doctoring lecture. October 2015.

52. Viola D. Senior lecturer, DrPH Program, New York Medical College. Personal email communication with P. Bourgois. Subject: Structural vulnerability pilot data. March 2014.

53. Campisi C. Program Coordinator, School of Public Health, University of Albany. Personal email communication with P. Bourgois. Subject: Structural competency training opportunities at NY Hospitals because of DSRIP. March 2015.

54. Francis D. Associate professor, School of Public Health, University of California, Berkeley. Personal email communication with S. Holmes. Subject: Competencies! December 2015.

55. Radical Medicine [blog of the University of California, San Francisco and the University of California, Berkeley Radical Medicine collective]. [Accessed May 22, 2016] http://www.rad-med.com.

56. Shamasunder. Associate professor, [Please check commas] University of California, San Francisco School of Medicine. Personal email communication with S. Holmes. Subject: Global health fellowship training. October 2015.

57. Beam M. Third-year medical student, Oregon Health & Science University. Personal email communication with all authors. Subject: Permission to use structural vulnerabilities questions. January 2015.

58. Nelson N. Professor, Department of Internal Medicine, Highland Hospital. Personal email communication with S. Holmes. Subject: Highland Hospital structural competency. January 2016.

59. Hansen M, Core faculty member, Family Medicine Residency Santa Rosa; Neff J, Third-year medical student, [Please check commas] University of California, Berkeley/University of California, San Francisco Joint Medical Program. Personal email communication with S. Holmes. Subject: SRFMR Training. January 2016.

60. Strong S, Director of the Office of Diversity and Inclusion, Samuel Meritt University; Neff J, Third-year medical student, University of California, Berkeley/University of California, San Francisco Joint Medical Program. Personal email communication with Seth Holmes. Subject: SC Training at SMU. January 2016.

61. Englander R, Cameron T, Ballard AJ, Dodge J, Bull J, Aschenbrener CA. Toward a common taxonomy of competency domains for the health professions and competencies for physicians. Acad Med. 2013; 88(8):1088–1094. [PubMed: 23807109]

Domain	Screening questions and assessment probes[b]
Financial security	**Do you have enough money to live comfortably—pay rent, get food, pay utilities, telephone?** • How do you make money? Do you have a hard time doing this work? • Do you run out of money at the end of the month/week? • Do you receive any forms of government assistance? • Are there other ways you make money? • Do you depend on anyone else for income? • Have you ever been unable to pay for medical care or for medicines at the pharmacy?
Residence	**Do you have a safe, stable place to sleep and store your possessions?** • How long have you lived/stayed there? • Is the place where you live/stay clean/private/quiet/protected by a lease?
Risk environments	**Do the places where you spend your time each day feel safe and healthy?** • Are you worried about being injured while working/trying to earn money? • Are you exposed to any toxins or chemicals in your day-to-day environment? • Are you exposed to violence? Are you exposed regularly to drug use and criminal activity • Are you scared to walk around your neighborhood at night/day? • Have you been attacked/mugged/beaten/chased?
Food access	**Do you have adequate nutrition and access to healthy food?** • What do you eat on most days? • What did you eat yesterday? • What are your favorite foods? • Do you have cooking facilities?
Social network	**Do you have friends, family, or other people who help you when you need it?** • Who are the members of your social network, family and friends? Do you feel this network is helpful or unhelpful to you? In what ways? • Is anyone trying to hurt you? • Do you have a primary care provider/other health professionals?
Legal status	**Do you have any legal problems?** • Are you scared of getting in trouble because of your legal status? • Are you scared the police might find you? • Are you eligible for public services? Do you need help accessing these services? • Have you ever been arrested and/or incarcerated?
Education	**Can you read?** • In what language(s)? What level of education have you reached? • Do you understand the documents and papers you must read and submit to obtain the services and resources you need?

Discrimination	***[Ask the patient]*** **Have you experienced discrimination?** • Have you experienced discrimination based on your skin color, your accent, or where you are from? • Have you experienced discrimination based on your gender or sexual orientation? • Have you experienced discrimination for any other reason? ***[Ask yourself silently]*** **May some service providers (including me) find it difficult to work with this patient?** • Could the interactional style of this patient alienate some service providers, eliciting potential stigma, stereotypical biases, or negative moral judgments? • Could aspects of this patient's appearance, ethnicity, accent, etiquette, addiction status, personality, or behaviors cause some service providers to think this patient does not deserve/want or care about receiving top quality care? • Is this patient likely to elicit distrust because of his/her behavior or appearance? • May some service providers assume this patient deserves his/her plight in life because of his/her lifestyle or aspects of appearance?

Chart 1.

Structural Vulnerability Assessment Tool[a]

[a]This tool should be used along with common questions regarding intimate partner violence, alcohol/substance use, diet, and exercise.

[b]The questions in bold function as initial screens that could potentially be quantified. They are followed by assessment probes to elicit more detail and context.

Table 1

Definitions of Key Terms Used in This Perspective

Term	Definition
Social history	The section of the clinical history in which social factors that may be clinically significant are noted.[1]
Social structure	The way a society is organized in hierarchies through institutions, policies, economic systems, and cultural or normative belief systems such as race, socioeconomic status, gender, and sexuality. A society's social structure generates its specific patterns of "social determinants of health."[2]
Social determinants of health	The social structural forces that affect health outcomes, ranging from individual and national level factors such as socioeconomic status, income inequality, racialized hierarchies and institutional policies (public versus private healthcare, incarceration rates, etc.) to global political and economic factors such as per capita gross national product, international trade relations, and military disruptions or political embargoes.[10]
Structural competency	The ability for health professionals to recognize and respond with self-reflexive humility and community engagement to the ways negative health outcomes and lifestyle practices are shaped by larger socio-economic, cultural, political, and economic forces.[6]
Structural violence	"Structural violence is one way of describing social arrangements that put individuals and populations in harm's way… The arrangements are structural because they are embedded in the political and economic organization of our social world; they are violent because they cause injury to people."[3]
Structural vulnerability	An individual's or a population groups' condition of being at risk for negative health outcomes through their interface with socioeconomic, political and cultural/normative hierarchies.[45] Patients are structurally vulnerable when their location in their society's multiple overlapping and mutually reinforcing power hierarchies (e.g., socioeconomic, racial, cultural) and institutional and policy-level statuses (e.g., immigration status, labor force participation) constrain their ability to access healthcare and pursue healthy lifestyles.
Structural Vulnerability Assessment Tool	The questionnaire and observational guide introduced in this Perspective for screening and evaluating a patient's level of health risk imposed by societal forces in order to organize a comprehensive health treatment plan that mobilizes supportive resources both inside and outside the clinical setting. The tool operationalizes for clinical practice a means to intervene on the negative health effects of what public health has identified as the social determinants of health and structural violence.