ORIGINAL RESEARCH

Social Medicine Grand Rounds: A Collaborative Education Hub to Promote Action on Social Determinants of Health in Rural Alaska

Lucas Trout, MA; Kristine Salters, BSN, RN; Rob Inglis, BA; Matthew Tobey, MD, MPH; Jennifer Kasper, MD, MPH; N. Stuart Harris, MD, MFA

Lucas Jacob Trout, MA
Social Medicine Program Manager, Maniilaq Association
Lecturer on Global Health and Social Medicine, Harvard Medical School
Email: Email: lucas_trout@hms.harvard.edu

Kristine Johanna Salters, BSN, RN
Acute Care Nurse, Maniilaq Association
Email: kristine.johanna@gmail.com

Rob Inglis, BA
Research Fellow, Division of Wilderness Medicine, Massachusetts General Hospital
Email: Robert.Inglis@ucsf.edu

Matthew Tobey, MD, MPH
Associate Director, Massachusetts General Hospital Fellowship Program in Rural Health Leadership
Instructor in Medicine, Harvard Medical School
Email: Matthew.Tobey@mgh.harvard.edu

Jennifer Kasper, MD, MPH
Associate Pediatrician, Massachusetts General Hospital
Email: jkasper@mgh.harvard.edu

N. Stuart Harris, MD, MFA.
Chief, Division of Wilderness Medicine, Massachusetts General Hospital
Associate Professor of Emergency Medicine, Harvard Medical School
Email: nsharris@mgh.harvard.edu

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Abstract

Background: The connection between social stratification and health inequalities in the United States suggests the need for medical education and practice to address social determinants of health as a key condition for achieving health equity. This reading of the project of social medicine—to wed health care delivery to a pragmatic and operationalized equity agenda—is particularly relevant to tribal health systems, where patient populations bear a disparate burden of injury and disease, where social and historical forces play a large role in the generation and maintenance of these health disparities, and where social and economic forces constrain the availability, accessibility, and efficacy of health care.

Objectives: This paper describes the conceptual framework and educational materials from a social medicine grand rounds program in an Alaskan arctic tribal health system, aimed at building clinical, organizational, and community capacity to address social determinants of health. Led by the Maniilaq Association Division of Social Medicine with partners at Harvard Medical School and Massachusetts General Hospital, social medicine grand rounds bring together hospital and village clinic-based care teams, social and tribal service workers, and community members to study and apply social medicine perspectives to health care delivery across 12 circumpolar Alaska Native villages. The model utilizes a case-based curriculum to drive clinical-community collaboration and critical analysis of health care delivery challenges focused on four broad priority areas established by tribal leadership: maternal and child health, chronic disease, mental health, and infectious disease.

Methods: The social medicine grand rounds program was piloted in April 2017 and will be formally

launched in November 2017. Researchers will utilize a mixed methods approach, pairing analysis of electronic health record data with participant interviews and surveys to investigate changes in provider practice patterns relating to action on social determinants of health, community and cross-sector partnerships, and revisions to health system policies and protocols over one year of programming. Pre-mid-post surveys collected before the program begins, at the six-month mark, and after a year of programming will assess participants' knowledge, readiness, and action to address social determinants of health. A social needs assessment protocol administered in the outpatient clinic will evaluate patients' met and unmet needs, and a discrete range of health outcomes will be tracked using patient registries in the electronic health record.

Discussion: We hypothesize that by maneuvering social determinants of health into the sphere of moral concern of health workers; by underscoring the clinical relevance and utility of social theory and analysis; by strengthening community partnerships linking primary care to social and tribal services; and by building a practical skill set among health workers to include social and structural interventions as part of the core clinical repertoire, social medicine education may help to mitigate the impacts of social stratification on health outcomes in Northwest Alaska. Ultimately, such projects can play a minor role in redressing structures of inequality that both produce and are propagated by poor health.

Conclusion: Social medicine grand rounds examine how social, historical, and structural forces are embodied as illness and injury in individuals, as well as how these forces shape medical efficacy, illness experience, and standard of care. The model serves to build inter-professional communities of practice for learning, deliberation, and action on social determinants of health in Northwest Alaska, and to build and leverage shared clinical, education, and training infrastructure with academic partners to expand the reach of the program and reduce health inequities.

Keywords: social medicine, Alaska Native, health equity, social determinants of health.

Background

The social stratification of health outcomes in the United States suggests the need for medical education to incorporate study of the social forces shaping the basis, impact, prevention, and treatment of injury and disease,[1] and to prepare health workers for clinical practice that brings social and structural intervention into the purview of medicine.[2] Similarly, the recalcitrance of socially-determined health disparities to unilateral biomedical intervention calls on health professionals to play a role in mitigating the impacts of social stratification on health outcomes.[3] This reading of the field and project of social medicine—to wed health care delivery to a pragmatic and operationalized equity agenda—is particularly relevant to tribal health systems, where patient populations bear a disparate burden of injury and disease,[4] where social and historical forces play a large role in the generation and maintenance of these health disparities,[5] and where social and economic forces constrain the availability, accessibility, and efficacy of health care.[6]

This paper provides an overview of the development of a social medicine grand rounds program in a remote tribal health system in Northwest Alaska.[7] Led by the Maniilaq Association Division of Social Medicine with partners at Harvard Medical School (HMS) and Massachusetts General Hospital (MGH), grand rounds serve to build inter-professional communities of practice[8] for learning, deliberation, and action on social determinants of health in Northwest Alaska and at academic partner sites. The program aims to demonstrate a scalable process model for moving social medicine education beyond the preclinical curriculum into practice, policy, and health systems, and for building and leveraging shared clinical, education, and training infrastructure with academic partners to increase the capacity of rural health centers to address health and health care disparities.

Social and community context

A growing body of research links social stratification to population health inequities, and to processes by which large-scale social forces are embodied as illness and injury in individuals.[3,9] Perhaps nowhere in the United States is this more evident than in rural and remote American Indian and Alaska Native communities,[5,6,10] where a range of health care delivery challenges further compound structures of inequality that both produce and are propagated by poor health. [5,6,11]

Community context.

Northwest Alaska is a rural and remote arctic/subarctic region served by a tribally-governed health and social services nonprofit corporation, Maniilaq Association. Maniilaq is the sole health services organization in a 38,000-square mile service area encompassing 12 Inupiat (Alaska Native) tribes.

The Maniilaq service area (MSA) encompasses the entirety of Alaska's Northwest Arctic Borough and the North Slope village of Point Hope, with a total population of 8,391, 83% of whom are Alaska Native. Kotzebue is the regional hub with a population of 3,201. The 10 additional MSA villages include Ambler, Buckland, Deering, Kiana, Kivalina, Kobuk, Noorvik, Noatak, Selawik, and Shungnak. As there is no road system connecting these communities to each other or to the rest of the state, travel must be accomplished by small aircraft or seasonally by snowmobile or boat. A map of the Northwest Arctic Borough can be seen in Figure 1.

Figure 1
Map of Northwest Arctic Borough
Photo Courtesy of Northwest Artic Borough School District

Communities in Northwest Alaska are shaped by many positive social forces, including strong cultural traditions, teaching of Inupiaq values including respect for Elders and hunter success, and a close-knit social life supporting food and labor sharing, mentoring of youth, and a sense of pride in culture and place. The region is also shaped by a more recent history of colonial settlement, economic exploitation, and rapid, imposed social change. Of the 12 villages served by Maniilaq Association, seven have recently been listed as distressed communities by the Federal Denali Commission, indexing severe economic hardship.[12] The population is young, with thirty-six percent under 18 years old.[13] Access to early childhood, primary, secondary, and higher education is improving as regional infrastructure expands; however, high school and college graduation rates have not yet achieved parity with the U.S. population as a whole.[14] The unemployment rate for Northwest Alaska remains more than four times the national average,[15] with a quarter of Alaska Natives in the Maniilaq service area living below the federal poverty level.[16]

Many Inupiat maintain a subsistence way of life as part of a vibrant culture stretching back over 10,000 years in Northwest Alaska. Sea mammals, fish, caribou, and berries comprise a significant portion of Elders' total dietary intake;[17] clothing, footwear, boats, hunting equipment, and other essential supplies are also still made, albeit significantly less frequently, by traditional experts. Figure 2 illustrates trapping for beaver, whose pelts are a source of material for winter clothing.

Figure 2
Trapping for beaver
Photo by Lucas Trout

Subsistence foods account for a much smaller percentage of calories consumed by youth and younger adults.[17] Statewide, per-person harvests of subsistence foods dropped by roughly 25% from the mid-1980s to 2012, with even more marked drops in younger age groups.[18] Economic development,[19,20] climate change,[21] and tactical assimilation [22] have placed a range of contradictory pressures on Inupiat communities to exploit or protect natural resources, engage in or forfeit subsistence practice, receive or dismiss Western education, and enter into or refrain from engaging the wage labor economy.[23]

Finally, Inupiat are among the Americans most affected by climate change through the disruption of subsistence food availability, food storage, overland travel, and changes in hunting conditions.[21] For some village communities, climate change has made forced relocation an imminent reality [24]—prophetizing Inupiat as among the nation's first climate refugees.

Social context of AIAN health disparities.

American Indian and Alaska Native health disparities have long been normalized and rationalized in North American public and political discourse,[25] a pattern which may explain the persistently poor federal funding of AIAN health services.[26] However, AIAN are among the few global citizens who are theoretically guaranteed, through trust and treaty with the United States government, health care as a citizen right.[27] That these health and health care disparities nonetheless exist, foregrounds a real and pressing challenge to tribal health systems, and especially their federal funders, to make good on their promise of quality, comprehensive, and universal care.

From 2009-2013, the all-cause mortality rate for Alaska Natives was 51% higher than the U.S. white rate.[28] Life expectancy for Alaska Natives in the Northwest Arctic Borough, though increasing, remains far below that for Alaska whites (69.7 years for Alaska Natives versus 77.7 for Alaska whites, based on the last available data).[28] Alaska Natives have higher rates than U.S. whites for nine of the 10 leading causes of death (cancer, heart disease, unintentional injuries, suicide, chronic obstructive pulmonary disease, cerebrovascular disease, chronic liver disease, pneumonia and influenza, and alcohol abuse).[29] Cancer, unintentional injury, and heart disease are the three leading causes of death for MSA Alaska Natives, with an age-adjusted cancer mortality rate 80% higher than that of U.S. whites.[4]

There are marked disparities in rates of health risk factors such as tobacco and alcohol use between MSA Alaska Natives and the general U.S. population.[30] Rates of diabetes, cardiovascular disease, and obesity have increased rapidly in tandem with reduced subsistence foods intake,[17] with rates of obesity among Alaska Natives rising 63% between 1991-1992 and 2005-2007.[31] MSA Alaska Natives are three times more likely than U.S. whites to die from an unintentional injury and seven times more likely to die from suicide.[4, 32] Sexual violence remains a far-too-common tragedy.[33]

Alaska Native health disparities are linked in research and public discourse to a broad and enduring range of social inequities that negatively impact many dimensions of health—and which also index the resilience of Alaska Native communities. Over the past century, Inupiat have experienced rapid revisions of livelihood, culture, and autonomy as American stakeholders consolidated their political and economic interests in the arctic.[34] Tuberculosis[34] and influenza [35] epidemics decimated much of Northwest Alaska's Inupiat population during a period of colonial economic exploitation and missionary settlement in the first half of the 20th century, while skyrocketing rates of cancer, liver disease, and suicide came to shape mortality in the latter half of the century,[31] paralleled closely by American incursions into Alaska Native systems of education, health care, and governance. [22]

Community leaders have responded practically, through community development and cultural revitalization projects, and by forging a counter-narrative which emphasizes the resilience of Inupiat in the face of profound social change.[23] Northwest Alaska hosts a tribally-governed health system, Inupiaq immersion preschool, subsistence camps for youth, and tight-knit communities that defy comparison to any American analog. The present-day social conditions of village communities reflect a legacy of colonial violence, cultural pride, resilience, and commitment to a unique way of life. Connecting these cultural and social strengths and resources to the health care system is a priority for regional tribal leadership, and is central to the mission of the Division of Social Medicine.

Theoretical framework in social context.

The grand rounds program draws on Diderichsen's model of the social production of disease,[36] adopted by the World Health Organization as a guiding framework for action on social determinants of health.[9] Diderichsen contends that socioeconomic-political contexts (e.g. political systems, labor markets, social policies) create social stratification, or hierarchies of social position across society. Social position leads to differential exposure to conditions that impact health, differential vulnerability to those conditions based on material and social resources, and differential consequences of injury and disease based on access to health care, material support, and other socially-determined factors. Finally, poor health circularly propagates social inequality by reducing economic security, mobility, and access to social supports.[9]

In response, clinicians, educators, and policymakers have called for the inclusion of structural competency and social medicine curricula in medical education,[1,2,7] the use of social needs interventions in primary care and other clinical settings,[37] and the application of social theory to improve clinical medicine and public health.[3] The growing academic and clinical fields tying social science to health care delivery suggest a need for interventions across multiple strata of social determinants of

health, from structural interventions focused on policy advocacy, to intermediary programs focused on food and housing security, to clinical interventions aimed at improving outcomes through social supports, such as including community health workers as part of the health care team.[9]

Beyond this generalized conceptual framework, Alaska Native program faculty have highlighted the importance of social participation and cultural safety as dimensions of health and health care particularly relevant to AIAN communities.[38] The faculty further observes that the generational effects of colonial social violence must be linked to the more immediate social determinants of health, such as addiction and interpersonal violence, in order to situate interventions within meaningful social contexts. In this way, connections can be drawn between the social determinants of health and the social production of health inequalities that medical orthodoxy often ascribes to individual agency. Farmer and colleagues call this desocialized medical narrative a form of "structural violence...through analytic omission." [3]

A second, related point raised by many residents of the region is that the history and structure of health care delivery itself represents a significant social determinant of health. Positively, life expectancy for Alaska Natives has increased dramatically over the past four decades since the advent of the Indian Health Service and accompanying innovations in the use of community health workers, telemedicine, and expansion of tribally-governed health services.[29] At the same time, American health care infrastructure is densely interwoven with a history of exploitative colonial efforts, resulting in some cases in distrust of health professionals and ambivalence toward biomedical intervention.[39,40] Though a thorough discussion of the social and political history of American Indian health care exceeds the scope of this paper, important scholarship on this subject exists. [25, 27, 41]

Northwest Alaska is served by 11 remote village clinics staffed by Community Health Aide/Practitioners (CHA/Ps) with varying degrees of training that define a graded scope of practice. CHA/Ps are able to collaborate with mid-level providers and physicians at a regional hub hospital via telemedicine to perform assessments and provide basic primary, preventive, and emergency care. On medical standing orders, they may prescribe medications (e.g., common antibiotics), perform interventions (e.g., reduce dislocated joints), administer immunizations, and perform diagnostic tests for common illnesses (e.g., throat swabs for streptococcal pharyngitis). Formally adopted by the Indian Health Service in 1968 after two decades of community-based care during Alaska's tuberculosis epidemic,[42] the statewide Community Health Aide Program serves as the frontlines of rural Alaska primary care for more than 50,000 people—with an estimated quarter million annual clinical encounters across 178 remote Alaskan villages delivered by more than 550 trained, primarily Alaska Native health workers.[43] While some villages experience significant staffing shortages due to high rates of attrition, the program has significantly improved access to medical care in remote communities.[46] Figure 3 shows a snowbulance outside of the Shungnak clinic.

Figure 3
Snowbulance outside of the Shungnak clinic
Photo by Lucas Trout

A regional 19-bed hospital, Maniilaq Health Center, is accessible by air in Kotzebue. Maniilaq Health Center provides outpatient, acute, obstetric, women's health, emergency, and dental care, but lacks staff specialist providers, a full range of diagnostic equipment, surgical capacity, and the resources to manage most serious illness and injury. Tertiary care is 500 miles away by air at Alaska Native Medical Center, and for some procedures Seattle may be the nearest option—1948 miles away. The geographic isolation of the region presents a formidable barrier to care; however, a number of remarkable innovations have improved access to and standard of care for rural/remote Alaskans.

Many of these social and structural features of Northwest Alaska life exceed the short-term capacity of a regional health system to address. However, we hypothesize that by maneuvering social determinants of health into the sphere of moral concern of health workers; by underscoring the clinical relevance and utility of social theory and analysis; by

strengthening community partnerships linking primary care to social and tribal services; and by building a practical skill set among health workers to include social and structural interventions as part of the core clinical repertoire, grand rounds may contribute in a small way to mitigating the impacts of social stratification on health outcomes.

Practically, the program aims to improve community access to traditional foods and hunter support, Elder services, housing programs, emergency assistance, education and scholarships, job training, disability services, tobacco cessation, substance use and behavioral health services, women's health, and tribal government services. By removing basic social and economic barriers to agency, work, and family life on both individual and community levels, such projects, over time, may play a role in addressing morbific social conditions and improving individual and population health.

Intervention design

Led by the Maniilaq Association Division of Social Medicine with partners in the Department of Global Health and Social Medicine at Harvard Medical School (HMS) and the Departments of Medicine and Emergency Medicine at Massachusetts General Hospital (MGH), social medicine grand rounds were developed among a network of tribal leaders, community wellness coalitions, academic partners, and regional health care and social service providers. Drawing on the community health education and mobilization approach developed in the region by Dr. Lisa Wexler and colleagues[45], grand rounds serve to build interprofessional communities of practice for learning, deliberation, and action on social determinants of health in Northwest Alaska, and to build and leverage shared clinical, education, and training infrastructure with academic partners. Specific social medicine competencies can be found in Table 4.

Table 4
Social medicine competencies

By the end of the grand rounds program, participants will be able to:
1. Relate the epidemiology of specific health disparities in Northwest Alaska to the historical and contemporary social forces that have contributed to these disparities;
2. Use conceptual frameworks from public health, social science, and social medicine to inform patient care, and to mitigate structural and social barriers to optimal health outcomes;
3. Mobilize practice knowledge of' tribal, social and community resources to address patients' social needs:
4. Recognize new opportunities for patient, social, community, and political advocacy.

Monthly grand rounds employ a case-based, guided-practice learning model to address both practical and conceptual problems in health care delivery, by bringing together hospital and village clinic-based care teams to study and apply social medicine perspectives to patient care. Each case in the grand rounds program—composite patients designed to draw attention to region-specific health issues with strong social determinants—presents participants with a complex scenario that requires thorough social analysis and well-coordinated interprofessional collaboration to address the patient's biosocial needs.

The cases are authored collaboratively by local health workers, community members, and academic partners at HMS and MGH, and address four broad priority areas in rural Alaska Native communities: maternal and child health, mental health, infectious disease, and chronic disease. Participants spend between one and four hours per case working together to coordinate care, identify gaps in services, share knowledge and experience related to the case, and brainstorm strategies to improve real-life outcomes for similar scenarios. The program serves as a platform for providers to learn from the patients they serve, and for social and tribal service professionals (for example, juvenile justice workers, social workers, and tribal leadership) to collaborate with health professionals across disciplinary boundaries.

In addition, each case is used to drive a discussion of specific conceptual frameworks from social medicine. Many of these were taught in "Introduction to Social Medicine and Global Health," recently a required course for all Harvard Medical School students (currently reformulated as part of "Essentials of the Profession").[2] Many others come from local program faculty teaching about culture, regional history, and explanatory models of health and illness.

For instance, the pilot case followed the care of a 23-year-old man ("Corey") with suicidal ideation,

who self-admitted to the emergency room after a snowmobile crash following the death, also by suicide, of his brother. Participants employed biosocial analysis, promoting a consideration of the social and structural basis of disease,[1-3] to contextualize Corey's social world, the contemporary ubiquity of suicide among young Alaska Native men,[28] and the broader forces that have elected clinical intervention the gold standard for suicide care.[31]

Participants utilized Foucault's[46] concept of biopolitics and Kleinman's[46] concept of social suffering as additional frameworks to inform Corey's care. These frameworks were briefly introduced by the facilitation team, who then used prompts (e.g., "How do you think Corey's beliefs about suicide should affect your interventions?") to drive group discussion of their meaning in the context of patient care. Social suffering—in part, how "[p]olitical power and social violence coerce subjectivity"[48]—serves as a vehicle for unpacking Inupiat narratives linking the ubiquity of youth suicide to the structural violence and poverty of social and economic rights woven into the fabric of postcolonial arctic life: that is, not merely an endogenous response to a defined category of psychiatric disorder, but as an inherently social, political, and moral index of social suffering made manifest through the act of suicide.[49-50]

For participants, clinical intervention came into focus in a very different way through this lens. In the discursive register of medicine, suicidality takes shape as a disease-like entity—many suicides making an 'epidemic'—that circularly invokes the need for systematic, state-orchestrated intervention.[51] Biopolitics, or biopower—Foucault's term for the politicization and governance of health[46] directed often at the 'maintenance of life itself'[40, 51] –framed participants' analysis of mental health care delivery for suicidal youth. This led to an investigation into patterns of civil rights restriction and displacement that mirror for many Inupiat the forced 'rights' to education and governance proffered by 20th century boarding schools, missionaries, and state agencies.[40, 51] In response, health workers considered the need to attend more fully to patients' experiences of their illness and care; establish effective referral systems to community and tribal resources; look to tribal leadership for guidance on non-clinical resources to promote health; and structure organizational policies and protocols to make room for more compassionate patient-provider interactions.[52] In the weeks after grand rounds, a plan for integrated care teams was established between primary care providers and social services, a partnership was forged with the Juvenile Justice Youth Service, and guidelines were revisited for navigating patient care during involuntary holds for psychiatric emergencies.

The grand rounds model was piloted by the first author and Maniilaq physician Sri Dakoji in April 2017 to assess feasibility and incorporate community and health worker feedback into the final design. Attendance was limited to 14 health professionals during the pilot, but is expected to reach 20-30 during the formal program, reaching CHA/Ps, midlevel and physician providers, case managers, nursing and public health nursing staff, tribal and social service workers, and community members. The course received favorable feedback based on surveys and personal communications. Department supervisors and administrators agreed to pay their staff for attendance, and the Partners HealthCare Office of Continuing Professional Development will award continuing medical education credit though the Maniilaq-Massachusetts General Hospital Rural Health Leadership Fellowship collaboration. Both local and external faculty recruited in early 2017. This faculty is comprised of regional tribal leadership, cultural advisors, and social service professionals; HMS faculty in anthropology, history of science, and global health and social medicine; MGH providers; and state and national experts in AIAN health policy. Funding was secured from the Substance Abuse and Mental Health Services Administration in May 2017, and the program will be launched in full form in November 2017.

Data collection

The grand rounds program will utilize a mixed methods approach, pairing qualitative participant interviews and pre-post surveys with analysis of electronic health record data to investigate changes in provider practice patterns relating to social determinants of health, community and cross-sector partnerships, and revisions to health system policies and protocols. Health outcomes will be operationalized for specific conditions addressed in grand rounds and followed by department leaders, a quality improvement effort requested by Maniilaq leadership.

Survey data will be collected at baseline and after the sixth and 12th grand rounds to assess participants' beliefs about the causes of health disparities, their role in addressing social determinants of health, and the social and tribal services available to their patients. For the course survey measures, mean total knowledge, readiness, and practice scores will be

calculated to assess for changes in patterns of understanding and action over time. The same scores will be compared to a non-participating control group of Maniilaq health professionals, and to the participating group using practice pattern data aggregated by provider from the previous year. Paired t-tests will compare the mean total scores for knowledge, readiness, and action across the two groups. Practice pattern data collected will include social and tribal services referrals, collaboration and communication with CHA/Ps, patient education, post-discharge follow-up, and coordination with case managers. Ethics approval for this research was granted the Institutional Review Board of Partners HealthCare.

Limitations and areas of concern

Leveraging tribal health systems to address social determinants of health is not a strategy without its problems. The social history of medicine across the north is one wedded to a history of colonialism during which state actors held a vested interest in turning indigenous groups on northern lands into politically and culturally assimilated citizens, in part through medical intervention.[40] Paine deemed this pseudo-humanitarian effort 'welfare colonialism', [39] while Foucault [46] made use of the concept of 'biopolitics' to describe the administration of 'bare life'[48]—that is, ensuring breathing bodies and little more. The further incursion of health services into social life can be seen from this point of view as an affront to the autonomy of indigenous families, cultures, and systems of care.[49]

That the present effort is called for and answerable to a tribally-governed entity, and focuses on building relationships between tribal leadership and health and social services, may be seen as a greater or lesser hedge against such accusations; in any event, we harbor little confusion over the exigency of delivering better care, and beneficiaries have little doubt that such care is deserved. To this end, the program aims to direct care away the 'maintenance of life itself' and toward mobilizing the regional health system to remove basic barriers to people living generative, safe, and healthy lives. It is hoped that by involving tribal leadership and community members more extensively in decisions about health care, the program may serve as a platform for community-led change.

Conclusions

The equity agenda at the heart of social medicine requires clinicians, administrators, and policymakers to develop new frameworks to address social determinants of health and the underlying social causes of health inequalities. By examining how social, historical, and structural forces are embodied as injury and illness in individuals, as well as how these forces shape medical efficacy, illness experience, and standard of care, this curriculum supports health workers in understanding the linkages between social determinants and concrete health outcomes, attending to social forces that mediate access to and utilization of health care, and translating social analysis into improved health systems and more effective clinical care.

Note

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