Addressing the Social Determinants of Children's Health: A Cliff Analogy

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Abstract: This paper presents a "Cliff Analogy" illustrating three dimensions of health intervention to help people who are falling off of the cliff of good health: providing health services, addressing the social determinants of health, and addressing the social determinants of equity. In the terms of the analogy, health services include an ambulance at the bottom of the cliff, a net or trampoline halfway down, and a fence at the top of the cliff. Addressing the social determinants of health involves the deliberate movement of the population away from the edge of the cliff. Addressing the social determinants of equity acknowledges that the cliff is three-dimensional and involves interventions on the structures, policies, practices, norms, and values that differentially distribute resources and risks along the cliff face. The authors affirm that we need to address both the social determinants of health, including poverty, and the social determinants of equity, including racism, if we are to improve health outcomes and eliminate health disparities.

Key words: Social determinants, health equity, health policy, poverty, racism.

Our Children, Our Future

Why should any child be born into disadvantage? As our earth teeters toward the brink of economic, political, even climactic disequilibrium, human-kind can ill afford to waste the tremendous potential that each child represents. The children

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are the ones who will carry on after we have ceased to exist, our emissaries into times unknowable. We can no longer afford to make selfish distinctions between "my" children and "your" children, but instead need to celebrate each child as one of "our" children. Our children are our future, and we must protect and nurture each one in order to maximize the chances of our survival as a species and as a planet.

This special issue of the *Journal of Health Care for the Poor and Underserved* addresses the social determinants of the health and well-being of our children. The *social determinants of health* are the contexts of our lives. They are the determinants of health which are outside of the individual. They are beyond individual behaviors and beyond individual genetic endowment. Yet these contexts are not randomly distributed, but are instead shaped by historical injustices and by contemporary structural factors that perpetuate the historical injustices. The *social determinants of equity* are the factors that determine the range of contexts observed in a given place and time, and the distribution of different populations into those different contexts.

In order to maximize the health and well-being of our children, we are challenged to venture beyond traditional health services to address the social determinants of health, but furthermore to challenge the current distribution of the social determinants of health by addressing the social determinants of equity. The remainder of this introduction is devoted to describing these levels of health intervention in more detail and to illustrating the distinctions between them with a "Cliff Analogy." The papers that make up the rest of the volume each address social determinants of children's health in some region or regions of the developing world.

Levels of Health Intervention

Medical and public health professionals increasingly acknowledge that improving the health of nations will require not only universal access to high quality health care, but also attention to the factors outside of the health sector which make some individuals and communities sicker than others in the first place. This is particularly true when considering the health of children, who are born with nearly limitless potential which is then shaped and too often constrained by the environments into which they are born.

Within the United States, the film series *Unnatural Causes: Is Inequality Making Us Sick?* is catalyzing a public conversation about the fact that an individual's health depends on more than their genes, their individual behaviors, and their access to health care.[2] In the international arena, the final report of the World Health Organization's Commission on Social Determinants of Health, entitled *Closing the Gap in a Generation: Health Equity Through Action on the Social Determinants of Health*, solidifies an international consensus that health is neither created nor maintained solely within the health sector.[3] The May 2009 resolution of the Sixty-Second World Health Assembly on *Reducing health inequities through action on the social determinants of health* underscores the fact that non-health sector interventions are needed to improve health outcomes and achieve health equity both within and between nations.[4]

This article presents a communication tool for describing the relationships and distinctions between provision of health services, addressing the social determinants

of health, and addressing the social determinants of equity. This "Cliff Analogy" was initially conceived by the first author in 1999 when she was an Ian Axford Fellow in Public Policy as a way of understanding and sorting programs developed by the New Zealand Ministry of Health to address Maori-Pakeha health disparities.[5] The analogy has since been expanded to make clear the differences between the social determinants of health and the social determinants of equity. Also available as an animated series of slides,[6] it is hoped that this "Cliff Analogy" will prove to be a simple and effective tool for understanding our current investments in health, planning our future investments in health, and communicating with colleagues, other stakeholders, and the general public about the full range of possible interventions to improve health status and eliminate health disparities.

The "Cliff Analogy"

Figure 1 depicts a cartoon of possible interventions to deal with the problem of people falling off of the cliff of good health. When an individual falls off a cliff (Figure 1a–e), that person (and his or her family) is heartened if there is an ambulance at the bottom of the cliff to speed them on to quality care (Figure 1f). However, we as a community might also be interested in others who could come behind and find themselves smashed at the bottom of the cliff. That is, we may choose to expand our view beyond individual health to population health and ask ourselves if there are additional health interventions we could make besides stationing lots of ambulances at the bottom of the cliff. Indeed, we might decide to place a net halfway down the cliff face, so that if someone has the misfortune to fall off at least they won't get smashed at the bottom (Figure 1g). But we also recognize that nets have holes in them, and some people might "fall through the cracks." So perhaps we make that a trampoline instead of a net halfway down the cliff. But then we might find that we have a lot of people who have fallen who are now bouncing up and down at half-functionality, never quite able to get back to the top of the cliff. Of course we could build a ladder from the trampoline back up to the top of the cliff. But we might also decide to keep people from falling off in the first place by building a fence at the top edge of the cliff (Figure 1h). However, that will have to be a very strong fence if there are a lot of people crowded up against it. What else can we do as a health intervention? We can move the population away from the edge of the cliff (Figure 1i).

The levels of health intervention which we have described so far include the ambulance at the bottom of the cliff (which represents acute medical care and tertiary prevention, to *treat* injuries among those who have fallen), the net or trampoline halfway down (which represents secondary prevention, to *prevent* injuries among those who have fallen), the fence at the top of the cliff (which represents primary prevention, to lower the risk of falls with a focus on individual risk), and moving the population away from the edge of the cliff (addressing the social determinants of health, to lower the risk of falls with a focus on community risk). When considering infant mortality, for example, the ambulance might represent neonatal intensive care units; the net or trampoline might represent prenatal care with its screening for premature labor and pre-eclampsia; the fence might represent prenatal nutritional supplementation programs; and moving the

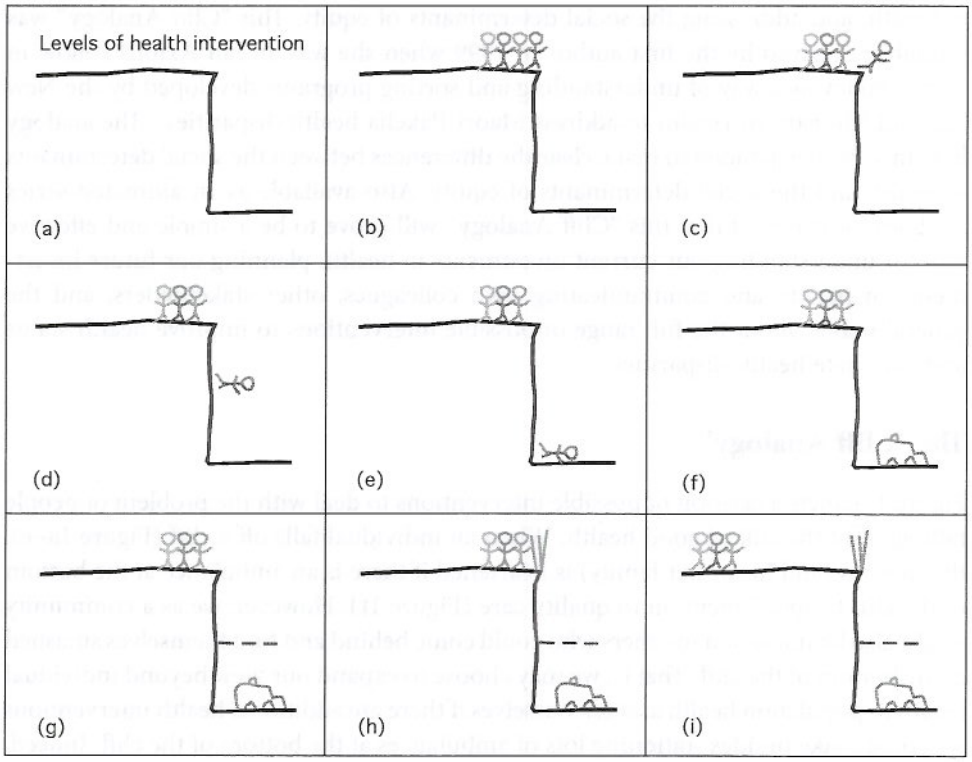

Figure 1. Levels of health intervention. As described in the text, four levels of health intervention are illustrated, including acute care and tertiary prevention (the ambulance at the bottom of the cliff), secondary prevention (the safety net half-way down the cliff face), primary prevention (the fence at the top edge of the cliff), and addressing the social determinants of health (moving the population away from the edge of the cliff).

population away from the edge of the cliff might represent poverty reduction to reduce community stress or excellent public schools to delay teenage childbearing.

Already, we see that this "Cliff Analogy" can be useful to several audiences interested in societal expenditures on health. Policymakers might use it to evaluate their current health investments and consider at what level new investments to benefit the public's health should be made. Community leaders might use it to describe a widened range of options when seeking to influence how health resources are spent. Together, policymakers and community leaders could decide, for example, that it is important to have an ambulance on call and to build a strong fence, but that most health resources should be devoted to moving the community away from the edge of the cliff.

How Do Health Disparities Arise?

So far, the "Cliff Analogy" has illustrated different levels of health intervention, but it has not elucidated how health disparities between groups arise. We will leave the image of the cliff for a moment to consider how health disparities arise on three levels: Dif-

ferences in quality of care, differences in access to care, and differences in underlying exposures and opportunities that create differences in baseline health status.[1] Because most health outcomes are the result of experiences outside the health sector, disparities that arise because of differences in exposures and opportunities are likely to be most fundamental, making some individuals and communities sicker than others in the first place.[7–10] Then, those sicker individuals and communities are often frustrated by differences in access to health care.[11,12] Finally, even those who are able to access the health care system are often further injured by differences in treatment within the health care system.[13]

Understanding these three levels at which health disparities arise, we return to the "Cliff Analogy" (Figure 2) with the realization that we are not dealing with a flat, two-dimensional cliff. Rather, the cliff is three-dimensional (Figure 2a–b), and we notice

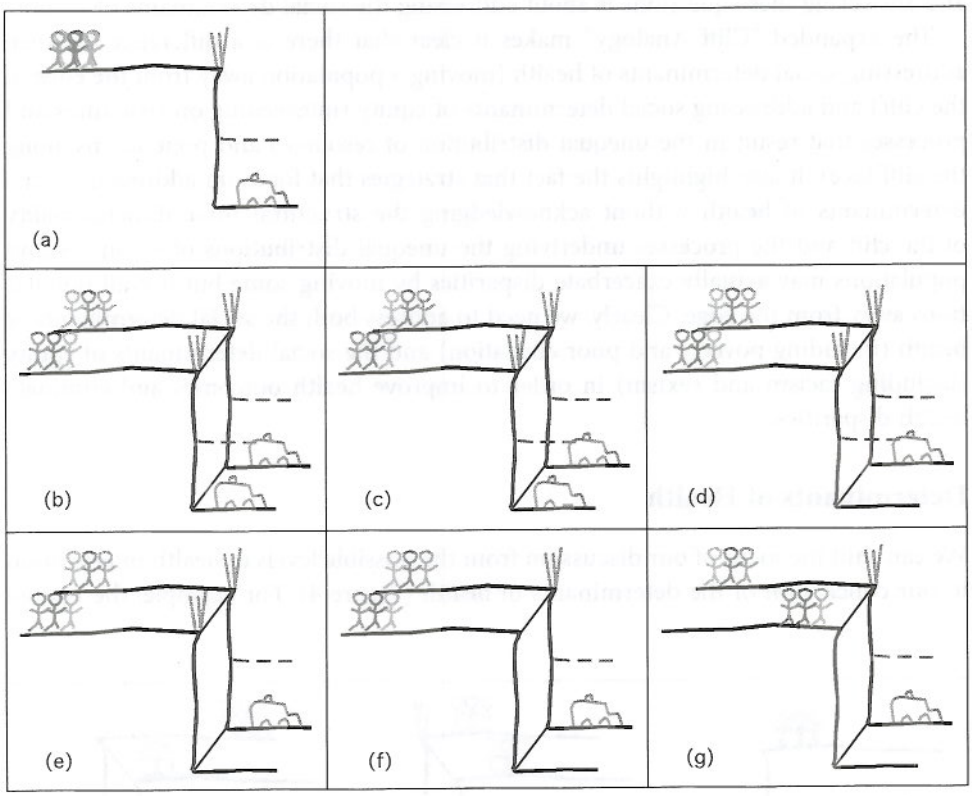

Figure 2. Expanded cliff analogy to address how health disparities arise. As described in the text, we must acknowledge that the cliff is not flat but is in fact three-dimensional. At some parts of the cliff, the ambulance may be there but may be slow or go off in the wrong direction. Or there may be no ambulance, no net, nor fence. And the center of the population may be closer to the edge. Addressing the social determinants of health, which involves moving the center of the population away from the edge of the cliff, is different from addressing the social determinants of equity, which involves monitoring and addressing the three-dimensionality of the cliff, differences in the distribution of resources, and differences in the distribution of populations.

that at some parts of the cliff an ambulance may be stationed at the bottom, but it may have a flat tire, or be slow, or drive off in the wrong direction (Figure 2c). Or maybe there is no ambulance there at all (Figure 2d), nor net (Figure 2e), nor fence (Figure 2f). As is so often the case at those parts of the cliff where resources are lacking, we may also find that the population is pressed closer to the edge (Figure 2g).

This expanded "Cliff Analogy" allows us to illustrate how health disparities arise (Figure 3). Differences in quality of care within the health care system are represented by an ambulance that is slow or goes off in the wrong direction at some parts of the cliff. Differences in access to care are represented by the lack of an ambulance, net, or fence at some parts of the cliff. Differences in underlying exposures and opportunities are represented by the closer proximity of some populations to the edge of the cliff. We now need to ask why the cliff is three-dimensional, and why there are differences in the distribution of resources and the distribution of populations along the cliff face. Raising and answering these questions is about addressing the social determinants of equity.

The expanded "Cliff Analogy" makes it clear that there is a difference between addressing social determinants of health (moving a population away from the edge of the cliff) and addressing social determinants of equity (intervening on structures and processes that result in the unequal distribution of resources and populations along the cliff face). It also highlights the fact that strategies that focus on addressing social determinants of health without acknowledging the structural three-dimensionality of the cliff and the processes underlying the unequal distributions of resources and populations may actually exacerbate disparities by moving some but not all populations away from the edge. Clearly, we need to address both the social determinants of health (including poverty and poor education) and the social determinants of equity (including racism and sexism) in order to improve health outcomes and eliminate health disparities.

Determinants of Health

We can shift the focus of our discussion from the possible levels of health intervention to our conception of the determinants of health (Figure 4). For example, the United

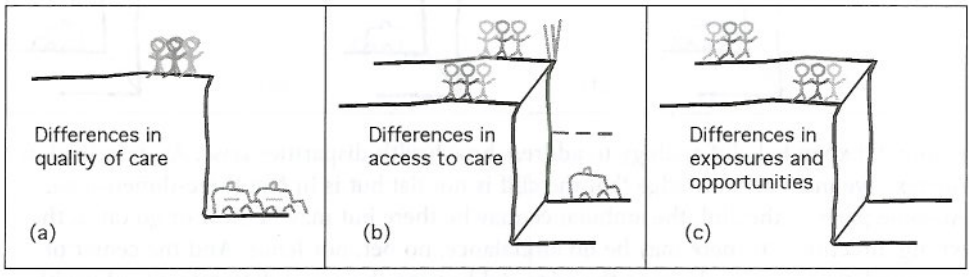

Figure 3. How do health disparities arise? Differences in quality of care within the medical care system (a), differences in access to curative and preventive care (b), and differences in underlying exposures and opportunities which make some individuals and communities sicker than others in the first place (c).

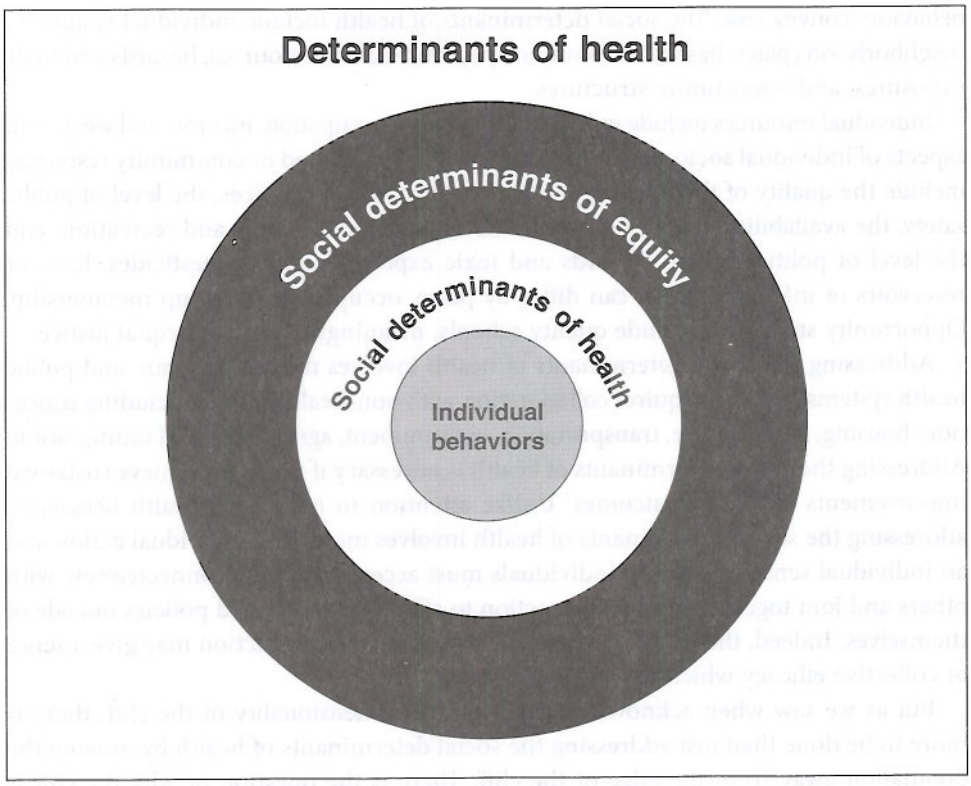

Figure 4. Determinants of health, including individual behaviors, the contexts in which the behaviors arise (social determinants of health), and the forces which create the range of contexts and differentially distribute populations into the contexts (social determinants of equity). We need to address all three levels of these determinants of health in order to improve health outcomes and eliminate health disparities.

States' health system currently identifies individual behaviors as the principal determinants of health status.[14] Smoking, drinking, sedentary lifestyle, overeating, risky sexual practices, and illicit drug use have all been in the public eye as health risks and targets for medical and public health action.[15] However, there is growing recognition that individual behaviors do not arise in a vacuum, but are conditioned by the social and physical environments in which we live.[16,17] There is a growing recognition that in addition to focusing on individual behaviors, we must also widen our gaze to acknowledge and address the social determinants of health.

What are the Social Determinants of Health?

The social determinants of health are those determinants of health that lie outside of the individual; they are beyond genetic endowment and beyond individual behaviors. They are, in fact, the context in which individual behaviors arise and in which individual

behaviors convey risk. The social determinants of health include individual resources, neighborhood (place-based) or community (group-based) resources, hazards and toxic exposures, and opportunity structures.

Individual resources include individual education, occupation, income, and wealth, all aspects of individual socio-economic position. Neighborhood or community resources include the quality of the housing stock, the range of food choices, the level of public safety, the availability of transportation, the accessibility of parks and recreation, and the level of political clout. Hazards and toxic exposures include pesticides, lead, or reservoirs of infection which can differ by place, occupation, or group membership. Opportunity structures include quality schools, meaningful jobs, and equal justice.

Addressing the social determinants of health involves the medical care and public health systems, but also requires collaboration with non-health sectors including education, housing, labor, justice, transportation, environment, agriculture, and immigration. Addressing the social determinants of health is necessary if we are to achieve sustained improvements in health outcomes. Unlike attention to individual health behaviors, addressing the social determinants of health involves more than individual action and an individual sense of efficacy. Individuals must accept their interconnectedness with others and join together in collective action to affect structures and policies outside of themselves. Indeed, the act of joining with others in collective action may give a sense of collective efficacy which can be empowering.

But as we saw when acknowledging the three-dimensionality of the cliff, there is more to be done than just addressing the social determinants of health by moving the population away from the edge of the cliff. There is the question of why the cliff is three-dimensional in the first place, and why there is a difference in the distribution of resources and the distribution of populations along the cliff face. When describing the contexts in which individual behaviors arise as the social determinants of health, there is the further question of why we see the range of contexts that we see, and why we see different populations differentially distributed into those contexts. We must enlarge our conceptualization of the determinants of health beyond the individual behaviors at the center and the contexts in which the individual behaviors arise (the social determinants of health) as a surrounding ring. We must acknowledge an additional outer ring, the societal determinants of context, which are the forces that create and distribute contexts. We described these forces earlier as the social determinants of equity (Figure 4).

What Are the Social Determinants of Equity?

The social determinants of equity are systems of power that determine the range of social contexts and the distribution of populations into those social contexts. In the United States, they include our economic system, which creates class structure through the private ownership of the means of production. They include racism, which structures opportunity and assigns value based on the social interpretation of how one looks.[6] They include homophobia, sexism, and other "isms" that structure opportunity and assign value based on sexual orientation, gender, and other axes of difference from those in power. If the social determinants of health are the contexts that answer the

question, "Why do we see this distribution of behaviors?" then the social determinants of equity are the forces that answer the question, "Why do we see this distribution of contexts?"

Addressing the social determinants of equity involves first monitoring for inequities along axes of societal power. It then involves examining and intervening on structures (the "who," "what," "when," and "where" of decision-making), policies (the written "how" of decision-making), practices and norms (the unwritten "how" of decision-making), and values (the "why" of decision-making). Addressing social determinants of equity is necessary if we are to eliminate health disparities and achieve health equity.

Conclusion

The poem "Fence or Ambulance?" by Joseph Malins that was published in the 1913 *Bulletin of the North Carolina State Board of Health*[18] opens this way:

'Twas a dangerous cliff, as they freely confessed,
Though to walk near its crest was so pleasant;
But over its terrible edge there had slipped
A duke, and full many a peasant;
So the people said something would have to be done,
But their projects did not at all tally.
Some said: "Put a fence around the edge of the cliff";
Some, "An ambulance down in the valley."

It closes:

Better guide well the young than reclaim them when old,
For the voice of true wisdom is calling;
To rescue the fallen is good, but 'tis best
To prevent other people from falling;
Better close up the source of temptation and crime
Than deliver from dungeon or galley;
Better put a strong fence 'round the top of the cliff,
Than an ambulance down in the valley.

Nearly a century since its first publication, this poem still offers much wisdom to those working in the health sector, highlighting the difference between a focus on curative care and a focus on prevention. In this paper we have expanded on Malins's "fence or ambulance" debate to describe levels of health intervention that go beyond the health sector and involve the whole world in addressing both the social determinants of health and the social determinants of equity.

The "Cliff Analogy" illustrates levels of health intervention as a progression from one to two to three dimensions (Figure 5). The realm of health services is arrayed along one dimension, a line from the bottom to the top of the cliff that includes the ambulance at the bottom of the cliff (medical care and tertiary prevention), the net or trampoline half-way down (safety net programs and secondary prevention), and the fence at the top of the cliff (primary prevention). Addressing the social determinants of health broadens

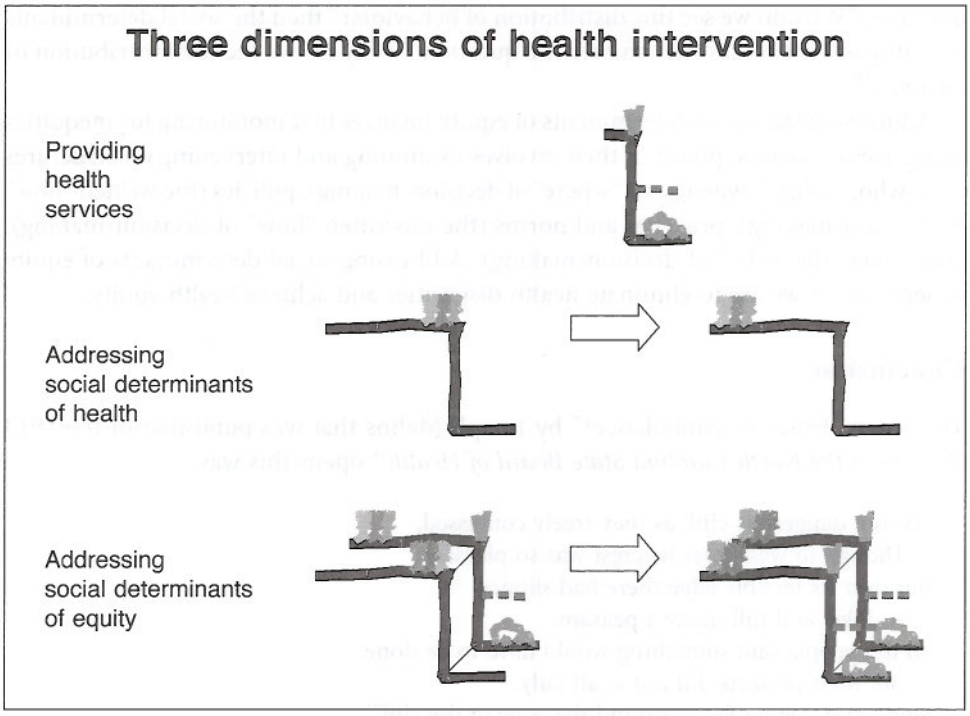

Figure 5. Summary of the three dimensions of health intervention. These include providing health services, addressing the social determinants of health, and addressing the social determinants of equity.

our efforts, as we move the population back from the edge of the cliff. Addressing the social determinants of equity expands our efforts into a two-dimensional plane as we move the population back from the edge of the cliff.

This "Cliff Analogy" can help us expand discussions about health and health care within nations to include more than the provision of quality services and the assurance of universal access to care. The improvement of health outcomes and the elimination of health disparities will require extending beyond the health sector to address the social determinants of health and the social determinants of equity. Attention to the social determinants of health will require a focus on eliminating poverty, one of the most consistent and powerful predictors of health outcomes.[17] Attention to the social determinants of equity will require a focus on eliminating racism, one of the most consistent and pernicious factors in United States' history[19] and international relations[20,21] and a fundamental cause of disparities in opportunity, income, and wealth which eventually manifest as health disparities.

In this era of numerous and well-accepted public health initiatives, we expand on Malins' "fence or ambulance" debate to present a broader menu of possible health interventions, including interventions on the social determinants of health and the social determinants of equity. We highlight the important distinction between the social determinants of health and the social determinants of equity, and underscore the need

to address both if we are to improve health outcomes and eliminate health disparities. We acknowledge that most health outcomes are not produced within the health sector and therefore can not be fully addressed by our medical care and public health systems. We encourage those who would improve the health of nations to understand and address both the social contexts in which our children live and the forces that create and differentially distribute our children into those social contexts.

Notes

1. Jones CP. Confronting institutionalized racism. Phylon. 2003;50(1–2):7–22.
2. California Newsreel. Unnatural causes: is inequality making us sick? San Francisco, CA: California Newsreel, 2009. Available at: http://www.unnaturalcauses.org/.
3. Commission on Social Determinants of Health-Final Report. Closing the gap in a generation: health equity through action on the social determinants of health. Geneva (Switzerland): World Health Organization, 2008.
4. World Health Assembly. Reducing health inequities through action on the social determinants of health (Resolution WHA62.14). Geneva (Switzerland): World Health Organization, 2009. Available at: http://apps.who.int/gb/ebwha/pdf_files/A62/A62_R14-en.pdf
5. Jones CP. Maori-Pakeha health disparities: can treaty settlements reverse the impacts of racism? (Ian Axford Fellowship Report). Wellington (New Zealand): New Zealand–United States Educational Foundation, 1999.
6. Jones CP. Social determinants of health and social determinants of equity. Presented at: Commission to End Health Care Disparities, Detroit (MI), Oct 2008. Available at: http://www.ama-assn.org/ama1/pub/upload/mm/433/camara-jones.pdf.
7. Applied Research Center and Northwest Federation of Community Organizations. Closing the gap: solutions to race-based health disparities. Oakland, CA: Applied Research Center, 2005. Available at: http://www.arc.org/content/view/250/481.
8. Shapiro MD. Equity and information: information regulation, environmental justice, and risks from toxic chemicals. Journal of Policy Analysis and Management. 2005:24(2):373–98.
9. Kennedy LM. Closing the gap: homeownership and racial inequity. The Current (The Public Policy Journal of the Cornell Institute for Public Affairs). 2006;9(2):73–4.
10. Sanchez TW, Stolz R, Ma JS. Moving to equity: addressing inequitable effects of transportation policies on minorities. Cambridge, MA: The Civil Rights Project (Harvard University), 2003.
11. Kaiser Commission on Medicaid and the Uninsured. The uninsured: a primer. Menlo Park, CA: The Henry J. Kaiser Family Foundation, 2007. Available at: http://www.kff.org/uninsured/7451.cfm.
12. Mayberry RM, Mili F, Ofili E. Racial and ethnic differences in access to medical care. Med Care Res Rev. 2000;57 Suppl 1:108–45.
13. Smedley BD, Stith AY, Nelson AR, eds. Unequal treatment: confronting racial and ethnic disparities in health care. Washington, DC: The National Academies Press, 2003.
14. Mokdad AH, Marks JS, Stroup DF, et al. Actual causes of death in the United States, 2000. JAMA. 2004 Mar 10;291(10):1238–45.
15. Satcher D. The prevention challenge and opportunity. Health Aff (Millwood). 2006 Jul–Aug;25(4):1009–11.

16. Link BG, Phelan J. Social conditions as fundamental causes of disease. J Health Soc Behav. 1995;Spec No:80–94.
17. Link BG, Phelan JC. McKeown and the idea that social conditions are fundamental causes of disease. Am J Public Health. 2002 May;92(5):730–2.
18. Malins J. Fence or ambulance? Bulletin of the North Carolina State Board of Health 1913;27(10):16. Available at: http://www.archive.org/stream/bulletinofnorthc27nort#page/16/mode/1up.
19. Jackson JL Jr, Watkins FE. A more perfect union: advancing new American rights. New York: Welcome Rain Publishers, 2001.
20. United Nations General Assembly. Report of the World Conference Against Racism, Racial Discrimination, Xenophobia, and Related Intolerance. Document A/CONF.189/12. New York: United Nations, 2002. Available at: http://www.unhchr.ch/huridocda/huridoca.nsf/(Symbol)/A.Conf.189.12.En?Opendocument.
21. United Nations General Assembly. International Convention on the Elimination of All Forms of Racial Discrimination. General Assembly Resolution 2106 (XX) 2. New York: United Nations, 1965. Available at: http://www2.ohchr.org/english/law/cerd.htm.