

Social Determinants of Health and Health-Care Solutions

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In 2001, the Centers for Disease Control and Prevention (CDC) and Kaiser Permanente published a study on how adverse childhood experiences affected the health of adults.¹ Abuse of all kinds and observing violence in childhood were associated with higher levels of smoking, alcohol abuse, depression, and poorer health in adulthood. In other words, battered children become battered adults.^{2,3} The world batters everyone in many ways, but some people are battered far worse than others. Part of our role as public health professionals is to help neutralize this battering.

EXPANSION OF PUBLIC HEALTH

The domain of public health has expanded dramatically in the last 60 years. This expansion makes it clear why public health is now able to address problems as basic as the social determinants of health. In the 1950s, public health concerned itself almost exclusively with infectious diseases. CDC was known as the Communicable Disease Center when the Epidemic Intelligence Service (EIS) program was established in 1951 to investigate outbreaks of infectious disease.⁴ In 1968, during the Nigerian Civil War, approximately two dozen EIS officers were used in the relief operation. They were still involved in infectious disease control, but were also establishing surveillance systems to monitor and improve nutrition. When I presented the results of the operation at the EIS conference that year, Alex Langmuir, who created the EIS, stood up to say that he supported this broadening of the EIS program and the role of CDC.

The National Institute for Occupational Safety and Health (NIOSH), created in 1970, brought CDC into the arena of occupational health. In 1985, when an Institute of Medicine report suggested the need for an injury control program, Congressman Bill Lehman of Florida inserted \$10 million into the Department of Transportation budget on the condition that it be given to CDC to found the National Center for Injury Prevention and Control.⁵ In 1989, Jeff Koplan and Jim Marks brought chronic disease into CDC's priorities by establishing

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what later became the National Center for Chronic Disease Prevention and Health Promotion.

Mental health is a prime target for the future expansion of the domain of public health. We stand to benefit tremendously from good mental health surveillance, more effective diagnosis and treatment of mental health problems, and application of public health measures to these problems. Our class president at the Harvard School of Public Health in 1965 was Dr. Yemi Ademola. He was killed during the civil war in Nigeria in the late 1960s, and we miss his leadership today, but I'll always remember what he wrote in the yearbook: ". . . there is no area of human knowledge beyond the interest of people in public health."

SOCIAL DETERMINANTS OF HEALTH

In the late 1950s, I worked at the Seattle–King County Health Department reviewing death certificates that went back 100 years. Myocardial infarctions didn't appear until the 1920s, and staphylococcal skin infections were listed as carbuncles or boils. Trends in reporting causes of death change, but data from death certificates are always limited. For example, pneumonia is often the cause of death for people with cancer, Parkinson's disease, or heart disease. While death certificates might list heart attacks or cancer, cigarette smoking is responsible for one in four deaths, but tobacco use is rarely indicated on death certificates. Factor in diet and alcohol consumption, and we can account for 40% of deaths.⁶ Studying death certificates is a poor way to understand what is really happening to a population's health.

The real causes of many deaths are social determinants such as illiteracy, fatalism, gender bias, racial bias, unemployment, and poverty.⁷ Poverty is the single biggest factor contributing to adverse health outcomes, and health outcomes worsen as poverty becomes more severe. In 1424, Hongxi, emperor of the Ming Dynasty in China, who himself grew up in poverty, said, "We must treat poverty like we would treat drowning. There is no time to lose."

The World Health Organization Commission on Social Determinants of Health recently examined programs designed to alleviate poverty.⁸ For example, Chile instituted a program that removed 70% of citizens from poverty through employment. In India, the Self-Employed Women's Association provides loans and empowerment to thousands of women.

Fatalism refers to the belief that a person cannot change his or her future; it is the opposite of empowerment and a major determinant of poor health. Surveys have shown that approximately 33% of Americans

are fatalistic, but this rate is as high as 90% in other countries. Tostan, a program in West Africa, is a model of the role of empowerment in countering fatalism and improving health. A group of women obtained the permission of village chiefs to stop genital mutilation and eliminate associated health problems. The grassroots movement grew rapidly, and now an area in West Africa that covers two million people is free of genital mutilation.⁹

THE DYSFUNCTIONAL U.S. HEALTH-CARE SYSTEM

The fundamental problem with the U.S. health-care system is that a large proportion of the population cannot afford health insurance, and without insurance, the cost of health care can be astronomical. The Social Security Act (SSA) of 1965 created Medicare, which provided care for everyone aged 65 years and older, regardless of financial status.¹⁰ It is a good program, but it was a horizontal solution for a vertical problem, and many people younger than age 65 remain uninsured and lack access to care. The SSA also created Medicaid, which was supposed to provide care for people with limited resources, but large segments of our population still lack adequate coverage.

Another problem with the U.S. health-care system is that the marketplace that controls health care is concerned primarily with profit, only secondarily with patients or with quality of care. The marketplace is the wrong solution for problems related to smoking or obesity because these conditions are highly profitable. The Hippocratic Oath charges physicians to "do no harm," but practitioners do harm by omission if they do not advise on prevention. Unfortunately, treating disease is reimbursable but preventing it is not.

SOLUTIONS

One potential solution would be to nationalize the U.S. health-care system. International models for doing so exist, but the political will for such a radical change currently does not. A less drastic potential solution would be to make the marketplace work for health care by focusing not on access, but on outcomes. To reimburse for outcomes requires a system to measure health outcomes. Reimbursement now is based largely on process because we have not focused on how to measure outcomes. Starting with Medicare and Medicaid, it would be possible to test systems reimbursing on outcomes, not for each individual patient but in terms of bonuses for achieving given outcomes for a million patient-days of experience. We could start

by reimbursing as we now do, for process, and then add incentives for improvements in outcomes. Health systems would be eager to sign up the sick rather than the healthy if they could make money by improving the outcomes of sick people. The best outcomes will be realized by, for example, reducing the rate of heart attacks instead of providing state-of-the-art treatment for heart attacks. Health systems would find it profitable to more aggressively encourage tobacco cessation, healthful diets, physical activity, blood-pressure control, and diabetes control.

STEPS TO MOVE FORWARD

Moving forward requires first identifying where we want to be—the “last mile”—and then defining the strategy for getting there and the barriers to that strategy. Because this health-care model depends on outcomes, we need a sensible metric for measuring those outcomes. In 1993, a World Bank report introduced the concept of disability-adjusted life-years,¹¹ which was a tremendous improvement on what had previously been available, but it still fails to address quality of life, value of life at different stages, and how to rate every condition.

Developing this metric for health outcomes would make it possible to incorporate prevention as part of medical practice, and practitioners would be reimbursed for preventive medicine because that is how outcomes improve. With experience, adverse social determinants could be added, and health-care reimbursement would have direct impacts on those determinants. With CDC developing health-outcome criteria and devising a surveillance system to monitor and reward programs successfully using prevention

to improve outcomes, the expansion of public health would have reached the ultimate position of coordinating public health and health-care delivery systems for the improvement of both individual and aggregate health.

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