



Research

Understanding the Social Determinants of Health

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Executive Summary

- The United States spends significantly more on health care than other developed countries yet has worse health outcomes, and one possible reason is its “medicalized” approach to health care: The U.S. health care system focuses on medical intervention while largely ignoring other factors that have a much greater impact on health outcomes.
- The “social determinants” of health are the non-medical factors that influence health outcomes. Where individuals live, learn, work, and age, along with socioeconomic status and race, all have a tremendous influence on their health.
- Policymakers are beginning to incorporate the social determinants of health into public policy – through, for example, a recent authorization for Medicare Advantage plans to cover non-medical benefits – indicating a shift toward a more comprehensive approach to health care.

Introduction

Health care spending per person has risen in the United States for as long as expenditures have been tracked, yet population health appears to be deteriorating. In 2016 health care spending increased 4.3 percent in the United States, reaching \$3.3 trillion, but life expectancy declined for the second consecutive year, which has not happened since 1963.^{[1],[2]} Chronic disease prevalence continues to grow, and 60 percent of the population is now reported to have one or more chronic conditions.^[3] Two-thirds of individuals are overweight or obese, one-third of American adults have high blood pressure, and the proportion of people with diabetes is expected to grow by 54 percent in the next 12 years.^[4]

Other developed countries spend about seven percentage points less of their gross domestic product (GDP) on health care, but they have better health outcomes, on average, including a higher life expectancy, lower infant mortality rate, and a lower chronic disease burden.^[5] One possible cause of the United States’ inverted proportion of spending and health outcomes is that the country over-invests in medical care while largely ignoring the other factors that influence people’s health.

The Social Determinants of Health

While 95 percent of U.S. health expenditures go toward medical care, most experts have long-agreed that medical services have a limited impact on health and well-being.^[6] What determines someone’s health is a combination of genetic predisposition, behaviors, the medical services received, and the social and physical environment.^[7] Recent estimates attribute 10 to 20 percent of health outcomes to medical care, 30 percent to genetics, 40 to 50 percent to behavior, and 20 percent to the social and physical environment. Individual behavior and the environment are often studied together as the non-medical determinants of health.^[8] In studies that only consider modifiable determinants and ignore genetics, the non-medical factors account for 80 to 90

percent of a person's health, and the contribution of medical care remains 10 to 20 percent.^[9] The leading causes of death in the United States – cancer, heart disease, and chronic respiratory disease – demonstrate the importance of the non-medical determinants to health, as all three chronic diseases are tied to unhealthy behaviors such as smoking and poor diet.^[10]

The “social determinants” of health (SDOH) are a subset of the non-medical determinants and are worth examining in more detail. While the health care delivery system impacts health during episodes of injury or illness, the social determinants interact with health much earlier, and on a day-to-day basis. They encompass the conditions in which people live, learn, work, and age, along with the broader social positions in which individuals find themselves that impact health. The social determinants can impact health directly but also can indirectly impact health by shaping how people behave. Poverty, unemployment, and housing insecurity are all examples of social determinants that result in poor health outcomes. Of course, while the factors and conditions considered here are referred to as “social *determinants*,” they may be more aptly discussed as “influencers” or “predictors” rather than direct determinants of an individual's or community's health status. Most of these conditions are highly correlated with one's health but not necessarily causal; further, all SDOH (except race) can change throughout one's life.

The SDOH gained renewed interest from much of the world following publication of the report from the World Health Organization's Commission on the Social Determinants of Health in 2008, though meaningful interest in the U.S. has only recently seemed to make its way to policymakers.^[11]

Where You Live

One social determinant is the living environment, which stretches beyond housing to the economic, regulatory, social, and physical (both natural and man-made) environment of a community. Where someone lives directly impacts access to health-promoting goods and services, including nutritious food options, medical care services, and fitness centers or other places suitable for exercising. One study observed that communities with greater access to supermarkets experienced lower obesity rates compared with communities that had a greater density of convenience stores, which often lack healthy options.^[12] Certain aspects of the physical environment can also promote health and well-being, such as walkable neighborhoods, public transportation options, and recreational space including parks and playgrounds. Increasing public transportation in a community has been shown to decrease the number of missed or delayed medical visits, resulting in better health outcomes and lower rates of chronic disease in an area.^[13]

High levels of crime and violence, community segregation, and a high concentration of fast food outlets, liquor stores, and tobacco advertisements correlate strongly with poor health outcomes. Segregation has repeatedly been found to be associated with worse health outcomes for minority residents, as limited funding in these communities results in less access to health-promoting goods and services and higher rates of crime and violence.^[14] Members of segregated communities have higher infant mortality rates, poorer mental health, and shorter life expectancies.^[15]

Exposure to air, water, and land pollution in the environment can also impact health directly. These challenges vary geographically and tend to disproportionately affect low income neighborhoods. One of the more prominent recent examples of a polluted living environment was the Flint water crisis, where tens of thousands of Michigan residents—42 percent of whom are in poverty and 54 percent of whom are African American—were exposed to lead-contaminated water for twenty months.^[16] As a result, 12 individuals died, fetal deaths increased 58 percent, the percentage of children with lead toxicity doubled, and fertility rates decreased by 12 percent.^{[17],[18],[19]} While it will take time to know the long-term consequences, past research

has shown that lead is a neurotoxin linked to hypertension, kidney damage, decreased bone and muscle growth, behavioral disturbances, and loss of intellectual function, especially in children.^[20]

Where You Learn

Studies indicate that education has a close association with health: More educated people have better health outcomes. Every additional year of schooling is associated with better health and healthier behaviors.^[21] More educated people smoke less, drink less, weigh less, have lower mortality rates, and have lower obesity and heart disease prevalence.^[22] On average, women who receive a bachelor's degree live 8.6 years longer than women without a high school diploma, and men with a bachelor's degree live 9.3 years longer than those without a high school diploma.^[23] Studies even show that more educated individuals have healthier infants.^[24] One study found a mother's educational level to be the strongest predictor of motor, language, and cognitive skills among pre-term babies at 20 months after their predicted due date.^[25]

Not only is educational attainment itself important for good health, but the learning environment is as well. As adolescents spend most of their waking hours in school, learning environments have a unique opportunity to promote health within the curricula as well as through the social and built environment. School curricula can promote health through wellness courses, physical education, and sex education. Physical education courses combined with nutritious school lunches have been found to mitigate childhood obesity in the short-term and may prevent children from becoming overweight long-term.^[26] A school's regulatory and social environment can also impact health, such as through the implementation of smoke-free environments, the provision of and options available within vending machines, and the establishment of social norms.

Where You Work

On average working adults spend over half their waking hours in the workplace, which provides an important setting to impact health. Workplace conditions vary greatly across disciplines, resulting in differential health outcomes. Employee compensation—through the provision of wages and benefits—can have a significant impact on one's health and the health of the workforce. Employee benefits which are likely to positively contribute to one's health—either during their working years or in old age—or the health of their dependents include health insurance, retirement benefits,^[27] and, particularly important for lower income employees, paid family and medical leave.^[28] The availability of health insurance, which is typically most affordable to an employee when offered in connection with one's employment (especially if the company is self-insured or able to purchase insurance in the large group market), increases access to affordable medical services, the health benefits of which have been well documented.^[29] Individuals without insurance are more likely to delay needed medical care, and as a result they have higher hospitalization rates, longer hospital stays, and worse health outcomes.^[30] Income is another important social determinant of health, as noted in more detail below. Incrementally higher-income people may live longer because they have more capital to spend on health-promoting goods and services, including their education, nutritious food, and housing in a safe and accessible neighborhood.^[31]

As in schools, the built and social environments of a work place also affect well-being. From the basics, such as easy access to clean drinking water and clean air, and an otherwise safe working environment, to enhancements, such as areas where employees can take a walk outdoors or eat a healthy lunch away from their desk, the physical environment can help employees be both healthier and more productive.^[32] Lactation support in the work place has been found to increase the amount of time a working mother breastfeeds, an important health behavior that improves infant survival during the first year and offers many benefits to mothers as well.^[33] Other workplace conditions can hurt employees' health, including discrimination and harassment in the

workplace. Stressful work environments are also linked to poor health outcomes for affected employees, including high blood pressure, substance abuse problems, and mental health issues.^[34]

Where You Age

The prevalence of disease increases with age, but conditions around one's aging environment can help mitigate injury and illness. Aging in a healthy way involves maintaining mental health, cognitive health, and physical health with little to no disease or disability.^[35] The accessibility of medical care in old age helps to address physical health, and the United States provides this access to nearly all retired individuals through the highly subsidized entitlement program Medicare. Because the elderly often are weaker and less nimble, ensuring their physical ability to access their homes, public spaces, and transportation options can help promote physical health before medical care is necessary. Ramps, public benches, and increased public transportation are all interventions that improve accessibility and allow seniors to remain active outside their homes.

Physical activity remains important throughout life, and studies consistently show that high activity levels in old age are associated with a decreased risk of cardiovascular disease, high blood pressure, hip fractures, and obesity.^[36] Social engagement is also important for healthy aging. Living alone, small social networks, and low community involvement are all risk factors for poor health in old age.^[37] Social support has been linked with numerous healthy outcomes, including lower rates of morbidity and mortality and improved mental health.^[38]

Socioeconomic Status and Race

Unlike the other social determinants that address an individual's surroundings, one's race and their socioeconomic status (SES) at birth are factors that cannot be controlled. SES and race are considered social determinants of health because different SES and racial groups have different health outcomes and health behavior patterns. Low SES is associated with more smoking, less physical activity, and poorer diets.^[39] Low SES has also been linked with increased risk of breast cancer, shorter lifespan, and increased prevalence of disability.^[40] By any metric of health, individuals with more money have better outcomes.^[41] The socioeconomic group into which an individual is born is both determined by and a determinant of the other social determinants, interacting with many of them to dictate what choices an individual has, and thus how they behave. SES determines where a person can afford to live, the amount and quality of schooling one can afford, and in many cases the type of job an individual can obtain. But despite the many obstacles that might make upward mobility particularly challenging for those with low SES, one's SES can change over the course of their life.

Race, however, cannot be changed. Unlike the other social determinants, individuals have no control over their race and ethnicity. Although an unfortunate reality, people do experience different health outcomes and health behaviors depending on their race, and African Americans and Hispanic Americans are often the social groups burdened with worse health outcomes. While some diseases affect races differently because of their genetic predisposition, such as sickle cell and Tay-Sachs disease, most of the difference in morbidity can be attributed to the social determinants. In the United States, African Americans experience significantly higher rates of coronary heart disease, obesity prevalence, and cancer incidence, all of which are linked to poor health behaviors that, as discussed, the living, educational, and working environments of an individual heavily influence.^[42] The poor health outcomes of particular racial groups are largely associated with other social determinants that disproportionately impact them, including low socioeconomic status, discrimination in the workplace, and segregation in neighborhoods.

Legislative Attention

Based on legislation and policy discussions at all levels of government, policymakers are coming to recognize the impact that social determinants have on health. For example, the CHRONIC Care Act, included in the Bipartisan Budget Act of 2018, expanded coverage under Medicare Advantage plans to include non-medical interventions. The new authority allows supplemental benefits to be tailored to enrollees based on their health status, which will improve the conditions in which beneficiaries live and age. The newly allowed non-medical benefits may include transportation for medical appointments, meal delivery, and home improvements that increase accessibility, such as the installation of a wheelchair ramp or hand-rails.^[43]

At the state level, North Carolina is attempting to transform its entire Medicaid system to prioritize social determinants. Starting in 2019, North Carolina plans to screen all Medicaid beneficiaries enrolled in managed-care organizations for food security, housing stability, and reliable transportation. The new system will implement a resource platform that will allow physicians to help patients seek the social benefits they need based on their screening results.^[44] Change is also happening at the local level. In Hennepin County, Minnesota, a pilot medical program has been launched by local health care providers in partnership with the state Medicaid agency to tackle the social determinants and, ideally, decrease expensive medical care for patients. The goal of Hennepin Health, a Medicaid accountable care organization, is to address the medical, behavioral, and social needs of enrollees.^[45] Since the program began in 2012, Hennepin Health has placed over 250 beneficiaries into permanent housing and reduced health care costs by 11 percent per year, on average.^[46] In Dallas, Texas, the Parkland Center for Clinical Innovation (PCCI) partnered with various community-based organizations to create a coordinated system, known as “Connected Communities of Care,” in which a patient can receive direct referral to local food pantries, homeless shelters, and other services.^[47] The patient is assigned a case manager and their electronic medical record is shared with these organizations following a referral so that they can provide personalized services, such as nutritional counseling and the provision of appropriate food for a diabetic patient. The program has been so successful that other cities are looking to replicate it, and multiple organizations, including CMS, have awarded PCCI grants to expand the program.^[48] These initiatives demonstrate that policymakers are becoming aware of the impact that the social determinants have on health.

Conclusion

The conditions in which a person lives, learns, works, and ages contribute to their health more than any other factor. While medical care receives the most funding and legislative attention, studies have consistently shown its small relative impact on health compared to the social determinants. Policymakers are recognizing the importance of the social determinants and incorporating them into public policy, indicating a shift from the traditional medicalized approach the United States has taken to solve its health care problems. This approach offers a way to reduce medical costs for individuals, insurers, and the government while improving outcomes, and it is worth further consideration and creative implementation.

[1] <https://www.cms.gov/Research-Statistics-Data-and-Systems/Statistics-Trends-and-Reports/NationalHealthExpendData/NationalHealthAccountsHistorical.html>

[2] <https://www.economist.com/united-states/2018/01/04/life-expectancy-in-america-has-declined-for-two-years-in-a-row>

[3] <https://www.rand.org/blog/rand-review/2017/07/chronic-conditions-in-america-price-and-prevalence.html>

[4] <https://www.niddk.nih.gov/health-information/health-statistics/overweight-obesity>

<https://www.ncbi.nlm.nih.gov/pmc/articles/PMC5278808/>

https://www.cdc.gov/dhdsp/data_statistics/fact_sheets/fs_bloodpressure.htm

[5] White et al. Health Cost Primer: Explaining Medical Cost Trend. Council for Affordable Health Coverage

Papanicolas et al. Health Care Spending in the United States and Other High-Income Countries.

[6] <https://www.healthaffairs.org/doi/10.1377/hlthaff.21.2.78>

[7] <http://www.ncsl.org/portals/1/documents/health/HealthDisparities1213.pdf>

[8] <https://bipartisanpolicy.org/library/what-makes-us-healthy-vs-what-we-spend-on-being-healthy/>

What are Social Determinants of Health

<https://www.healthaffairs.org/doi/10.1377/hlthaff.21.2.78>

<https://www.kff.org/disparities-policy/issue-brief/beyond-health-care-the-role-of-social-determinants-in-promoting-health-and-health-equity/>

[9] <http://www.healthcarevaluehub.org/cost-and-quality-problems/browse-cost-driverquality-issue/social-determinants-health/>

<http://www.ncsl.org/portals/1/documents/health/HealthDisparities1213.pdf>

<https://nam.edu/social-determinants-of-health-101-for-health-care-five-plus-five/>

<http://aligningforhealth.org/what-are-social-determinants-of-health/>

[10] <https://www.cdc.gov/nchs/fastats/leading-causes-of-death.htm>

[11] http://www.who.int/social_determinants/thecommission/finalreport/en/

[12] <https://pdfs.semanticscholar.org/19e7/05c6fb97d8a5c2d5329fe9b10c180679624e.pdf>

[13] https://altarum.org/sites/default/files/uploaded-publication-files/05_project_report_hsd_cost_benefit_analysis.pdf

[14] <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC1497358/pdf/12042604.pdf>

- [15] <https://www.brookings.edu/blog/usc-brookings-schaeffer-on-health-policy/2017/02/15/re-balancing-medical-and-social-spending-to-promote-health-increasing-state-flexibility-to-improve-health-through-housing/>
- [16] <https://www.census.gov/quickfacts/fact/table/flintcitymichigan/PST045217>
- [17] <http://www.pbs.org/wgbh/nova/next/body/flint-water-tied-to-fetal-death-and-lower-fertility-rates/>
- [18] <https://ajph.aphapublications.org/doi/abs/10.2105/AJPH.2015.303003>
- [19] <https://apnews.com/6fe411b1ad2c48c1860012e66f96d933/Michigan-official-faces-manslaughter-trial-over-Flint-deaths>
- [20] <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC5086690/>
<https://www.ncbi.nlm.nih.gov/pmc/articles/PMC2858639/>
- [21] <https://www.sciencedirect.com/science/article/abs/pii/S0167629609001143>
- [22] <https://www.sciencedirect.com/science/article/abs/pii/S0167629609001143>
- https://www.cdc.gov/dhdsp/docs/data_set_directory.pdf
- <https://www.cdc.gov/nchs/data/databriefs/db288.pdf>
- [23] https://www.cdc.gov/media/releases/2012/p0516_higher_education.html
- [24] <http://citeseerx.ist.psu.edu/viewdoc/download?doi=10.1.1.882.3289&rep=rep1&type=pdf>
<https://www.kff.org/disparities-policy/issue-brief/beyond-health-care-the-role-of-social-determinants-in-promoting-health-and-health-equity/>
- [25] <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC4919155/>
- [26] <https://onlinelibrary.wiley.com/doi/abs/10.1111/j.1467-789X.2008.00515.x>
- [27] https://assets.americashealthrankings.org/app/uploads/ahr_issuebrief17.pdf
- [28] <https://iwpr.org/wp-content/uploads/wpallimport/files/iwpr-export/publications/B334-Paid%20Parental%20Leave%20in%20the%20United%20States.pdf>
- [29] <https://www.nejm.org/doi/full/10.1056/NEJMs1706645>
- [30] <https://www.nejm.org/doi/full/10.1056/NEJMs1706645>
- <http://annals.org/aim/article-abstract/704489/delayed-access-health-care-risk-factors-reasons-consequences>

[31] Chetty et al. The Association between Income and Life Expectancy in the U.S.

[32] http://www.who.int/occupational_health/healthy_workplaces_background_original.pdf

[33] https://www.cdc.gov/breastfeeding/pdf/BF_guide_2.pdf

<https://www.nichd.nih.gov/health/topics/breastfeeding/conditioninfo/benefits>

[34] <https://www.forbes.com/sites/hbsworkingknowledge/2015/01/26/workplace-stress-responsible-for-up-to-190-billion-in-annual-u-s-healthcare-costs/#2950ba30235a>

[35] <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC4811626/>

[36] <https://onlinelibrary.wiley.com/doi/abs/10.1111/j.1532-5415.2000.tb06884.x>

<https://www.sciencedirect.com/science/article/pii/S1873959813000379>

<https://pmj.bmj.com/content/90/1059/26>

[37] <http://journals.sagepub.com/doi/abs/10.1177/002214650905000103>

[38] <https://link.springer.com/article/10.1007/s10865-006-9056-5>

<https://link.springer.com/article/10.1093/jurban/78.3.458>

[39] <https://link.springer.com/article/10.1007/s10865-007-9098-3>

<https://www.cdc.gov/mmwr/preview/mmwrhtml/mm5844a2.htm>

[40] <https://ww5.komen.org/Breastcancer/Highsocioeconomicstatus.html>

<https://www.nejm.org/doi/full/10.1056/NEJMsa073350#t=article>

[41] Williams et al. Population Health: Behavioral and Social Science Insights

[42] Williams et al. Population Health: Behavioral and Social Science Insights

<https://www.cdc.gov/vitalsigns/heartdisease-stroke/index.html>

<https://www.cdc.gov/nchs/data/databriefs/db288.pdf>

<https://www.mdanderson.org/publications/cancerwise/2010/04/race-and-ethnicity-as-cancer-risk-factors.html>

http://www.pfizer.com/files/products/Racial_Differences_in_Cancer.pdf

[43] <https://www.nytimes.com/2018/06/24/us/politics/medicare-chronic-illness-benefits.html>

[44]

http://www.modernhealthcare.com/article/20180803/TRANSFORMATION01/180809944?utm_source=modernhealthcare&utm_medium=email&utm_campaign=TRANSFORMATION01-180809944&utm_term=.841076

[45] <https://www.healthaffairs.org/doi/10.1377/hblog20140915.041076/full/>

[46] https://www.nytimes.com/2015/03/23/health/taming-health-costs-by-keeping-high-maintenance-patients-out-of-the-hospital.html?fb_ref=Default&_r=1

<https://www.healthaffairs.org/doi/abs/10.1377/hlthaff.2014.0648>

[47] <https://pccinnovation.org/connected-communities-of-care/>

[48] <https://pccinnovation.org/grants/>