



GENEIA WHITE PAPER

Social Determinants of Health: From Insights to Action

Making SDoH Scalable with Technology

INTRODUCTION

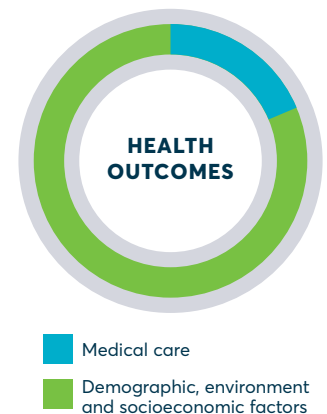
Google social determinants of health and, in less than 60 seconds, you will have more than 40 million results. Google social determinants of health conferences and there will be more than 33 million entries. Undoubtedly, social determinants of health (SDoH) has emerged as a frequent topic of conversation in healthcare circles.

Four statistics help to explain the strong interest in social determinants of health:

- ▶ **Health costs:** In 2017, U.S. healthcare costs were nearly **\$3.5 trillion**. By 2026, costs are expected to increase to **\$5.7 trillion**, representing nearly 20 percent of the economy.



- ▶ **Health outcomes:** Recent research suggests **medical care accounts for only 10-20 percent of health outcomes** while the other 80-90 percent are attributed to demographic, environment and socioeconomic factors.



- ▶ **Prevalence of social determinants of health:** 68 percent of patients have at least one social determinant of health challenge, according to a study of 500 random patients; 57 percent have a moderate-to-high risk for financial insecurity, isolation, housing insecurity, transportation, food insecurity and/or health literacy.



“

68% of patients have at least one social determinant of health challenge, according to a study of 500 random patients



- ▶ **Value-based care:** With large payers like Aetna and United aggressively moving their provider contracts to value-based care along with the commitment by the Centers for Medicare & Medicaid Services (CMS) to value-based programs, this payment model is expected to account for **59 percent of healthcare payments** by 2020.



In this white paper, you'll learn about:

- 1 Social determinants of health: What are they and why are they so important now?
- 2 Success stories: How healthcare organizations successfully use social determinant data to improve outcomes and costs
- 3 How healthcare organizations and care managers put SDoH data into action to more effectively manage patient populations

WHAT ARE SOCIAL DETERMINANTS OF HEALTH?

Healthy People 2020 defines social determinants of health (SDoH) as "conditions in which people are born, live, learn, work, play, worship and age that affect a wide range of health, functioning and quality-of-life outcomes and risks. Conditions (e.g., social, economic and physical) in these various environments and settings (e.g., school, church, workplace and neighborhood) have been referred to as 'place.' In addition to the more material attributes of 'place,' the patterns of social engagement and sense of security and well-being are also affected by where people live."

The Kaiser Family Foundation expands the definition to include "factors like socioeconomic status, education, neighborhood and physical environment, employment and social support networks, as well as access to healthcare."



“

*In 2017, U.S. healthcare costs were nearly **\$3.5 trillion.***

*By 2026, costs are expected to increase to **\$5.7 trillion***

SOCIAL DETERMINANTS OF HEALTH

ECONOMIC STABILITY	NEIGHBORHOOD & PHYSICAL ENVIRONMENT	EDUCATION	FOOD	COMMUNITY & SOCIAL CONTEXT	HEALTH CARE SYSTEM
Employment	Housing	Literacy	Hunger	Social Integration	Health Coverage
Income	Transportation	Language	Access to Healthy Options	Support Systems	Provider Availability
Expenses	Safety	Early Childhood Education		Community Engagement	Provider Linguistic and Cultural Competency
Debt	Parks	Vocational Training		Discrimination	Quality of Care
Medical Bills	Playgrounds	Higher Education		Stress	
Support	Walkability				
	Zip Code/ Geography				

HEALTH OUTCOMES

Mortality, Morbidity, Life Expectancy, Health Care Expenditures, Health Status, Functional Limitations

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

Another way of looking at social determinants of health is to weigh the impact of different factors on risk of premature death. As shown in the figure below, research has found that "health behaviors, such as smoking and diet and exercise, are the most important determinants of premature death."

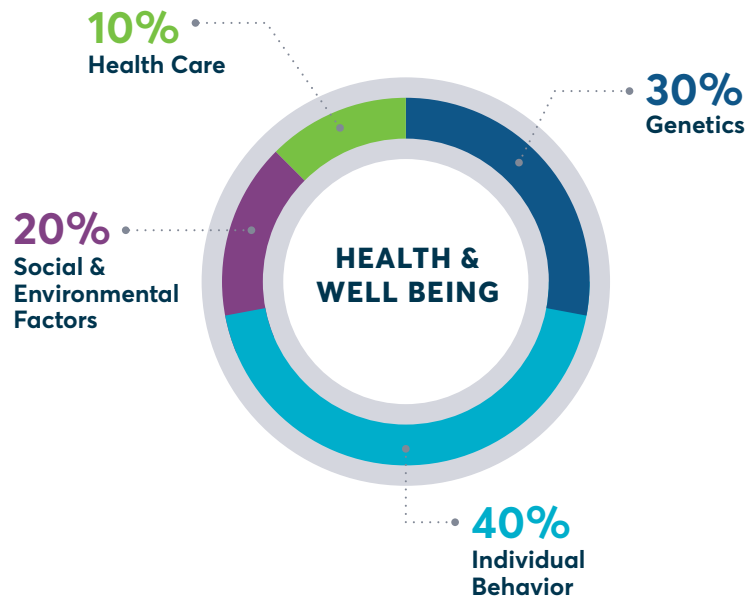


Chart source: <https://www.kff.org/disparities-policy/issue-brief/beyond-health-care-the-role-of-social-determinants-in-promoting-health-and-health-equity/>

BROAD AGREEMENT ABOUT THE IMPORTANCE OF SOCIAL DETERMINANTS OF HEALTH

Medical care alone is insufficient to improve health as it is estimated to account for only 10-20 percent of the “modifiable contributors to healthy outcomes for a population. **The other 80 to 90 percent are sometimes broadly called the SDoH:** health-related behaviors, socioeconomic factors and environmental factors.”

The majority of physicians believe SDoH matter for their patients and SDoH assistance would help their patients. A **Leavitt Partners study** of physician attitudes about SDoH found:



Transportation: 66 percent of physicians believe assistance arranging healthcare transportation helps patients



Housing: 45 percent say affordable housing aids patients



Food: 48 percent believe getting sufficient food benefits patients



Income: 54 percent consider income assistance a help to patients



Healthcare pricing: 75 percent say patients benefit from information about the price of healthcare and health insurance

A Deloitte study, *Social Determinants of Health: How are Hospitals and Health Systems Investing in and Addressing Social Needs?*, found 88 percent of hospitals say they screen for social needs. The screening most often happens for inpatient (90 percent) and high-utilizer populations (83 percent). “Large, non-profit, government-owned, system-affiliation and disproportionate share hospitals (DSHs) are more likely to screen patients for social needs than other hospital types.”

A Connance study of 47,674 encounters with 37,568 patients over a one-year period found social determinants of health contributed to **more than 50 percent of hospital readmissions**. Transportation and housing risk were particularly impactful. The study also discovered patients with higher transportation risk had an average of 41 percent more excess days in the hospital and patients with a higher housing risk were 32 percent more likely to exceed the average hospitalization time.

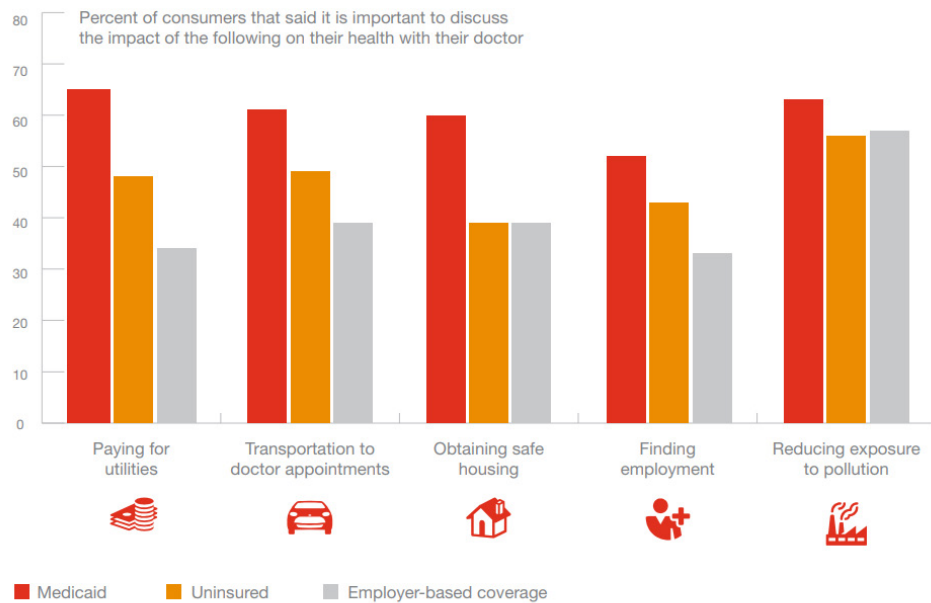


“

Medical care alone is insufficient to improve health as it is estimated to account for only **10-20 percent** of the modifiable contributors to healthy outcomes for a population

Consumers too recognize the impact of SDoH. Medicaid patients, in particular, said it was important to discuss SDoH with their physicians. A May 2018 PwC Health Research Institute survey found more than 60 percent of Medicaid patients recognize the importance of discussing with their doctor the health impacts of paying for utilities, transportation to doctor appointments, obtaining safe housing and reducing exposure to pollution. There is broad agreement among all consumers of the importance of raising the issue of pollution exposure with their doctor.

Figure 11: Social determinants of health are perceived to be of greater importance to the health of Medicaid patients



Source: PwC Health Research Institute consumer survey, May 2018

Chart source: <https://www.pwc.com/us/en/industries/health-services/pdf/pwc-us-healthcare-top-health-industry-issues-2019.pdf>

ADDRESSING SOCIAL DETERMINANTS OF HEALTH: SUCCESS STORIES

Given the profound impact social determinants have on patient health outcomes, it makes perfect sense that addressing a patient's housing, transportation and food needs reduces health spending. Research has shown this to be true.

Payers, in particular, lead the way with pilots and research studies demonstrating the effectiveness of managing patient social determinants:

- ▶ A 2016 study by the Robert Wood Johnson Foundation reported a 17 percent decrease in emergency department use, a 26 percent reduction in emergency spending, a 53 percent decrease in inpatient spending and a 23 percent decrease in outpatient spending as the result of referring 33,000 people to 106,000 community-based programs and services.
- ▶ Research conducted by WellCare Health Plans and the University of South Florida College of Public Health found connecting patients with social services to address SDoH generated a double-digit reduction in healthcare spending. The study reported an additional 10 percent decrease in healthcare costs – equating to more than \$2,400 per person per year savings – for Medicare and Medicaid members who were successfully connected to social services compared to a control group of members who were not. In addition, patients are more likely to be engaged in their health when social determinant barriers are addressed. Specifically, they were:
 - 6.9 times more likely to have a better adult BMI score
 - 2.8 times more likely to have a better medication assessment score
 - 2.3 times more likely to have a better colorectal cancer screen
 - 1.7 times more likely to schedule and attend their annual PCP visit.
- ▶ For some common chronic conditions such as diabetes, hypertension, diabetes and coronary artery disease, a Moody's Analytics study for the Blue Cross Blue Shield Association showed social determinants drive larger differences in health impacts.
- ▶ Geisinger Health System's Fresh Food Farmacy program provides 15 hours of education about diabetes and healthier living, followed by 10 free nutritious meals a week for diabetics and their families. It costs \$2,400 per patient per year to operate the program, and early research shows an 80 percent reduction in overall health costs: from an average of \$240,000 per diabetic member per year to \$48,000.
- ▶ Missed appointments and care delays cost more than \$150 billion a year. To address lack of access to non-emergency transportation, CareMore launched a three-month pilot to offer members rides to appointments via Lyft. Early results showed improvements in wait times, costs and member satisfaction:
 - 30 percent reduction in average wait times, from 12.5 to 8.8 minutes
 - 33 percent reduction in average per-ride costs, from \$31.50 to \$21.30



“

*Payers, in particular,
lead the way with pilots
and research studies
demonstrating the
effectiveness of
managing patient
social determinants*

“

Improving health status among the underserved populations is the ultimate goal of health center programs



Similarly, ACOs and other value-based care provider organizations have experimented with programs to mitigate SDoH, in particular food insecurity. For example, Advocate Health Care's ACO began screening patients at admission for malnutrition risk. Those with elevated risk scores were given an oral nutritional supplement within two days of admission. High-risk patients also received "nutrition education, post-discharge instructions, follow-up calls, and coupons for oral nutritional supplements." Within six months, [the ACO reduced healthcare costs by \\$3,800 per patient, resulting in total savings of \\$4.8 million.](#) Hospital readmission rates also dropped.

Even legal aid organizations such as [LegalHealth in New York City](#) have successfully prioritized social determinants. LegalHealth operates clinics in the city's public hospitals that support patients in tenant-landlord disagreements "to help solve issues that negatively impact health such as mold, poor ventilation and bug infestations. At an average cost of \$225 per case, LegalHealth was able to effectively demand apartment fixes for asthma patients, resulting in a 90 percent drop in emergency room visits and hospital admissions for that patient group."

PUTTING SDoH DATA INTO ACTION: TECHNOLOGY MAKES IT SCALABLE

The success stories outlined above as well as the decades of work by community health centers – also known as federally qualified health centers (FQHCs) – suggests it is, in fact, possible to help patients mitigate their social determinant challenges. Leveraging SDoH is thought to be in the DNA of community health centers (CHCs) and the more than 1,000 CHCs serving 28 million patients in over 11,000 communities may very well be the healthcare entities that have the longest track record on SDoH. That's because many of them have been firmly embedded in their communities for as many as four decades and they are bound by the [requirements as codified in the HRSA Health Center Program Expectation](#) statement of August 17, 1998.

Specifically,

- ▶ Improving health status among the underserved populations is the ultimate goal of health center programs. Health centers must have a system of care that ensures access to primary and preventive services, and facilitates access to comprehensive health and social services. Services must be responsive to the need and culture of the target community and/or populations.

In 2016, the PRAPARE tool (Protocol for Responding to and Assessing Patient Assets, Risks, and Experiences) was made available to CHCs with a goal of "systematically collecting standardized questions ...to gain better insight on the [CHC] population of patients being served and...help...demonstrate the value." The tool contains 21 standardized questions and has been built into templates in four electronic health records (EHRs). At an individual level, the answers are used to calculate a patient's overall risk score and at a population level, to gain better insights which, in turn, enables more effective allocation of resources.

Likewise, healthcare organizations beyond community health centers are leveraging technology to scale their efforts to identify and address social determinants for individuals and populations.

Technology enables prioritization of social determinant data, allowing payer and provider care managers, health plan member advocates and others who work directly with patients to personalize and improve patient care. Increasingly, analytics and insights platforms are ingesting population and patient-level data including housing, transportation, food insecurity and more and integrating this information directly into the patient record.

Take medication adherence. Research suggests the annual cost of medication non-adherence is \$100 to \$289 billion. For many patients, the failure to take their prescribed medications is tied to social determinant of health challenges, commonly a lack of transportation. A patient record that integrates claims, clinical and social determinant data in real-time can help a care manager identify the reason(s) and the solution(s).

AN EXAMPLE OF THE USE OF SOCIAL DETERMINANTS IN ACTION

A combination of publicly-available county and zip code data and patient-level social determinant information can dramatically improve the effectiveness of care planning for patients, if made readily available to care managers. For example, the care manager responsible for a patient with congestive heart failure, hypertension and type 2 diabetes, and social determinant indicators for housing and transportation could leverage that information, drilling into the patient record to see information such as:

- ▶ The patient moved three times in the past 12 months,
- ▶ There is no known licensed driver in the household,



“

For many patients, the failure to take their prescribed medications is tied to social determinant of health challenges, commonly a lack of transportation

“

Increasingly social determinant data is being used to enhance the development of risk models

- ▶ The nearest caregiver for the patient lives 2,000+ miles away and
- ▶ The closest in-network pharmacy is nearly a mile away from the patient's current residence.

Social determinant information presented in this manner suggests transportation is the reason the patient has not recently filled prescriptions.

In this case, the care manager would contact the patient to confirm she does not have access to a car and is not within walking distance to the nearest bus stop.

Within the patient record, the care manager could arrange for medications to be sent to the patient's home as well as create a referral to a social services organization that provides transportation to physician visits.

Similarly, care managers can identify and address populations or subpopulations with social determinant gaps. For example, an employer with a high prevalence of diabetes and prediabetes among employees and dependents can work with a health plan care manager to determine if social determinant barriers such as hunger, access to healthy food options and/or the absence of parks, playgrounds and sidewalks are adversely impacting employees' ability to embrace the kind of lifestyle changes needed to manage diabetes and prediabetes. The employer may also choose to add healthier options in the company cafeteria, replace vending machines with fruit bowls and install fitness equipment in the workplace.

SOCIAL DETERMINANTS: WHAT'S NEXT?

The next generation of action is the addition of social determinant risk scores to the patient record, bringing a higher level of prioritization and personalization to the work of care managers. If, for example, a patient record shows a social determinant risk score was 10 out of 10 for transportation, 7 for isolation and 5 for housing and neighborhood stress, a care manager could prioritize validating transportation challenges and working to remedy this social barrier.

Increasingly social determinant data is being used to enhance the development of risk models. Health vendors are aggressively developing capabilities to incorporate SDoH data into analytic insights. Imagine a population health analytics platform that is able to tell the physician the patient is at risk to miss the next appointment



because of a transportation barrier. For many physicians, SDoH data will have the greatest value when helping predict which patients will develop a quality care gap and what will be the most effective way to engage the patient - communication channel, type of message and more - to help the patient adhere to a care plan.

CONCLUSION

Given the research indicating that 80+ percent of health outcomes are tied to social determinants of health, the evolution of the healthcare industry to value-based care models more closely connecting providers and patient outcomes and the ability to use technology and analytics to scale SDoH initiatives, it is expected that healthcare organizations of all types – payers, providers, hospitals and even employers – will increasingly incorporate SDoH data to improve healthcare quality, cost and patient satisfaction. This type of data will be used at the population level, for example, to identify and engage a payer’s diabetics and prediabetics with food insecurity and at the individual patient level to remedy social determinant challenges. To be effective, SDoH data needs to be integrated into the patient record on a timely basis, prioritized for ease of use by physicians, care managers and care teams and able to be tracked and addressed within the same patient record.



“

*It is expected that healthcare organizations of all types – **payers, providers, hospitals and even employers** – will increasingly incorporate SDoH data to improve healthcare quality, cost and patient satisfaction*

LEGAL NOTICE

© Copyright Geneia LLC 2019
Geneia LLC P.O. Box 772618 Harrisburg, PA 17177-2618

Produced in the United States March 2019

Geneia, the Geneia logo, Geneia.com and Theon are trademarks of Geneia LLC. A current statement of our intellectual property and Terms of Service is available on the web at www.geneia.com. This document is current as of its publishing date and may be changed by Geneia at any time.

Any individuals or medical information relating to them presented in this document are fictional and not intended to represent or relate to any specific person. Any similarities to any real person are purely coincidental and unintentional.

ABOUT GENEIA

Geneia LLC is a healthcare analytic solutions and services company that focuses on improving systems to support personalized, patient-centered care. We help clients improve outcomes, lower costs and restore the Joy of Medicine to physician practice. Our technology, education and training, insights and clinical services simplify the evolution to value-based care and drive alignment and collaboration among healthcare providers, health plans and employers. The company has offices in Harrisburg, PA and Manchester, NH.

LEARN MORE

Visit **Geneia.com** or connect with us on Facebook, Twitter and LinkedIn.

solutions@geneia.com

866.267.9894



solutions@geneia.com | 866.267.9894 | Geneia.com

