Review Article

Review of strategies to address social determinants of health and health disparities to improve health outcomes

Vicki Brown[1], Jessica Cataldo[1*], Thomas Shaw[1], Sandra Collins[1]

[1] Southern Illinois University Carbondale, College of Applied Sciences and Arts, School of Allied Health, Health Care Management, Carbondale, Illinois, United States

Corresponding author and reprints: Jessica Cataldo. Southern Illinois University Carbondale, College of Applied Sciences and Arts, School of Allied Health, Health Care Management, 1365 Douglas Drive - Mailcode 6615, Carbondale, Illinois, United States.

Email: jessica.cataldo@siu.edu

Accepted for publication: 12 July 2019

Abstract

Background: In the United States, medical care accounts for roughly 10% of health outcomes. All other contributions to health outcomes are attributed to genetics, environment, social circumstances, and behaviors. These categories are collectively known as social determinants of health (SDOH), which can cause health inequities and disparities. It is becoming increasingly important to address the underlying factors of health outcomes as reimbursement for quality of care becomes the norm in the United States.

Methods: A literature review using Google Scholar was conducted to identify strategies that health care organizations can implement to address social determinants of health within their communities.

Results: At the organizational level, a robust population health management program and screening for social determinants are important to identify patients who may need assistance with social determinants of health. Technology is a critical tool for success with these endeavors; however, organizations must be cognizant of physician burnout. At the community level, community partnerships are necessary to extend care outside of the hospital's walls. Additionally, selecting medical conditions associated with key social determinants is a practical approach to measuring return on investment.

Conclusion: Effectively integrating new programs, technology, and community partnerships that target the vulnerable populations into a healthcare organization can prove to be beneficial in improving health outcomes and lowering healthcare costs.

Keywords: Population Health Management; Quality of Health Care; Social Determinants of Health

Cite this article as: Brown V, Cataldo J, Shaw T, Collins S. Review of strategies to address social determinants of health and health disparities to improve health outcomes. SDH. 2019;5(3):207-215. DOI: https://doi.org/10.22037/sdh.v5i3.25413

Introduction

In 2016, health care expenditures in the United States reached an epic $3.4 trillion, accounting for 18% of the gross domestic product (1). These expenditures were not equally distributed. Roughly 5% of the population accounted for half of all healthcare expenditures (2).

The majority of expenditures was spent treating high-risk individuals who were elderly and/or had serious or chronic conditions, such as diabetes, cardiovascular diagnoses, and respiratory disease, to name a few. Many of these conditions exist due to health disparities and poor social determinants of health. Social determinants of health are the conditions in which people live, work, and grow, and include economic status, physical environment, education, social influences, and access to health care (3). The social determinants of health account for 60% of health outcomes (4). The life expectancy in counties with poor social determinants of health is 20 years less than counties with sufficient levels of the social determinants (5).

Since the enactment of the Affordable Care Act in 2010, many changes have been made to the healthcare system in the United States. The rate of uninsured Americans went from 13.6% in 2013 to 8.1% in 2016 (6). Not-for-profit healthcare organizations are now required to complete a community health needs assessment every three years in order to maintain tax exempt status. Reimbursement models have transitioned from fee-for-service models to the latest Quality Payment Program model under the Medicare Access and CHIP Reauthorization (MACRA). Now, more than ever, organizations need to shift their focus on improving quality of care and health outcomes. This focus needs to address not only the methods used within an organization to improve outcomes, but it also needs to emphasize improving the social determinants of health that can lead to poor outcomes. Addressing the factors that lead to chronic conditions can effectively improve an organization's reimbursement rates by reducing readmission rates, decreasing emergency department visits, improving quality of care measures, and most importantly, improving quality of life for the population. Reducing negative health outcomes is essential in lowering healthcare expenditures and can be effectively performed by addressing social determinants of health and health disparities.

The social determinants of health can be broken down into several categories which influence each other. Socioeconomic status, specifically poverty, can create barriers to access to healthy food, neighborhood safety, housing, education, and access to health care. Social support and disparities in public service can lead to poorer health outcomes. This includes racial and ethnic disparities and lack of community support. Poor sanitation and lack of public transportation can directly impact health and access to health care. Geography also plays a role in the social determinants of health. People who live in rural areas are less likely to have access to healthcare than those in urban areas. Level of education can directly impact social determinants of health in that people with lower levels of education have poorer health literacy and often lower incomes impacting their ability to seek out healthcare (7). However, there are several approaches that can be used to address the social determinants of health and health disparities. The aim of this paper is to review strategies that health care organizations can take to address social determinants of health and health disparities to improve health outcomes of patients and the broader community.

Methods

A literature review using Google Scholar was undertaken using the following key terms: "Social determinants" AND "Health care organizations." The search was conducted in May 2018 and focused on specific strategies healthcare organizations can take to address social determinants of health within their organizations. In November 2018, the lead author attended a webinar on measuring return on investment (ROI) related to social determinants of health. A second literature search was undertaken following this webinar using Google Scholar adding the key word "Return on Investment."

This review includes strategies at both the organizational and community levels, and includes a discussion of how to measure return on investment for these strategies.

Results

Strategies at the Organizational Level

Key changes to policies and programs within the facility can position healthcare organizations to better address social determinants of health. These include implementing a population health management program, updating electronic medical records to include addressing social determinants that may be directly correlated with patient conditions, using a screening tool for social determinants of health upon arrival to a facility, improving on discharge planning techniques and transitional care practices, implementing a telemedicine program, and improving patient engagement through the use of patient portals.

Population health management programs aim to improve health outcomes of populations as well as financial and clinical efficiency of the organization. Population health management programs often include three key components: care coordination, care management, and panel management. Care coordination is the organization of a patient's care between those involved in care process, including the patient and family, to deliver appropriate services without duplication. Social support and community services can be included within this process. Care coordinators can help identify barriers to care that patients are experiencing and link them with appropriate community services to address these barriers. Similar to care coordination efforts for specialist consultations and diagnostic tests, care coordinators can help close the loop on these referrals to ensure patients are connecting with the community resources appropriately. The use of Direct secure messaging, when applicable, can help make this process seamless for healthcare organizations.

Care management begins with risk stratification to assess what patients are at high-risk for negative health outcomes. Social determinants of health, particularly barriers to care, can be included in risk stratification processes since these circumstances can significantly influence a patient's risk of negative outcomes. A dedicated care manager then works with the patient to develop a care plan with goals to improve the patient's health status. The goal of care management is to improve patient wellbeing and enhance coordination of care while providing cost-effective, non-duplicated services. In doing so, a link is formed between the patient and the care team, and patients often become more engaged in their care. This ensures that patients do not fall through the cracks and that the patients are given quality care.

Panel management consists of using the electronic health record (EHR) system to identify patients who have had gaps in their care and reaching out to them to get them scheduled for preventive services to ward off the possibilities of negative health outcomes before the patient becomes at risk. Most health problems will occur long before a person seeks out health care services (8). By moving upstream and engaging people proactively in their healthcare, the likelihood of positive outcomes is higher. If the negative social determinants of health and health disparities can be reduced early on, the patient will decrease their odds of developing chronic conditions. This will not only reduce overall healthcare expenditures in the long run but improve the value of care.

Population health management programs can be implemented through the use of a care management dashboard with interoperability with the EHR within the organization. The care management team would consist of a physician as the team leader, nurse care managers who work closely with high-risk patients, care coordinators who work with moderate- and low-risk patients, and community-based

resources. Risk stratification is key in this process to ensure resources are being distributed to those with the greatest need. Furthermore, developing a strong community resources guide is necessary to help link patients to appropriate services outside the healthcare facility. Healthcare organizations simply cannot meet every need of a patient but can help patients navigate to appropriate community resources.

While it is important to address the social determinants of health in physician practices, physician burnout is a major issue. Incentivizing providers to address the social determinants and providing them with adequate support staff to lessen the burden on the physician are methods that could be incorporated into a practice. Incorporating care teams within a practice can reduce the burden placed on the physician. Care teams should consist of social workers, care coordinators, and community health workers. The American Academy of Family Physicians (AAFP) developed the Everyone Project to provide guidelines for physicians, a screening tool for both the physician and the patient and connect patients with needs to the resources required (4). Linking patients with community resources, providing team-based care, and care coordination are also components of the patient-centered medical home models. The AAFP recommends that patients be given the screening assessment upon arrival to the office. Once completed, the care team reviews the completed social determinants of health tool, scores it, and determines the patient needs. An action plan is developed and given to the physician prior to his/her visit with the patient and incorporated into the plan of care for the patient. A website is available to locate community resources to include in the action plan (5). By entering the patient's zip code, a list of all community resources addressing all aspects of the social determinants from food to income will be generated. The AAFP suggests training the entire staff on this team-based approach so that everyone knows their role and responsibility. The AAFP has developed a guide for implementation of the team-based approach that addresses understanding the patient community, improving knowledge related to the health effects of social determinants, tackling bias in the practice, empowering the entire care team, and implementing techniques to improve health literacy (4).

Another important strategy for addressing the social determinants of health and health disparities is to incorporate these factors into the EHR system. Preset prompts and alerts can be incorporated into the EHR to cue providers to dig deeper with subjective data about the patient. Asking patients about their social and economic factors, living conditions, health behaviors, social support system, and their physical environment can lead to early interventions by connecting patients with the proper community resources and educational materials. Health Leads is a non-profit organization that, through a written agreement with an organization, can be a referral source for patients with poor social determinants of health. Once a physician has indicated in documentation that a patient has a specific need, the Health Leads program can link the patient with the outside sources to help decrease the disparities (9). This will also improve the patient-care-team relationship by learning more about the patient than just their physical well-being. Patients will feel like the provider is genuinely concerned and dedicated to providing comprehensive care and may have a higher rate of satisfaction with the healthcare organization. Furthermore, patients may also improve their health literacy if the providers are spending more time with their patients. In 2008, Williams, Costa, Odunlami, and Mohammad wrote that Dr. Julian Tudor Hart used this approach in what he called the "anticipatory care model" and spent more time with his patients and gave more comprehensive care (8).

His approach led to effectively improving the health of the community by reducing blood pressure levels among hypertensive patients, the rate of smoking and the rate of mortality among men.

Cantor and Thorpe suggested adding more Current Procedural Terminology (CPT) codes and International Classification of Diseases (ICD) 10 codes to specify social determinants will help improve reimbursement and referral capabilities of providers to address these patient needs (12). They suggest taking code Z59.4 (lack of adequate food and safe drinking water), and breaking it down into two different codes, one for food and one for water. This would allow for more customized referrals to address these issues. If reimbursement for these services and assessments was standardized, providers would have more incentive to address social determinants and link patients with resources to improve outcomes. Efforts have been made to address improving standardization. The Office of National Coordinator for Health Information Technology has created guidelines for the collection of social determinant information. The Social Interventions Research and Evaluation Network has also initiated efforts for standardizing the collection of social determinant data.

Cantor and Thorpe reported that integrating the social determinants of health on an individual level and on a community-based level into an EHR can provide supplemental clinical decision support for providers (12). Currently, Epic has a population health module, Healthy Planet that offers providers the tools to help improve patient outcomes and reduce costs (11). This module allows providers to integrate individual data into population health data in order to proactively address social determinants of health. Healthy Planet allows organizations to perform predictive analytics based on the population data.

Improving transitional care programs within healthcare organizations is another way of effectively improving the risks related to social determinants of health. Typically, people who have barriers in their social determinants of health end up being the high-risk patients and the high utilizers of healthcare services in the long run. With improved transitional care programs, readmission rates and emergency department visits can be reduced. A screening tool was developed by researchers at the University of Minnesota Department of Family Medicine and Community Health called the Patient Centered Assessment Method (12). This tool has a four-level rating scale for the social determinants of health (13). The use of this tool during acute inpatient stays can provide clinical decision support for nursing staff to prompt the use of outreach support services for the patient and improve follow up following discharge. The use of this tool effectively improves communication between hospitals and primary care physicians.

Health disparities and poor social determinants of health can also be addressed with the use of telemedicine services. Patients who are at high risk for chronic diseases and who have a lack of access to healthcare, whether it is due to their geographical location or lack of transportation, would greatly benefit from telemedicine services. Telemedicine also provides patients with access to specialty physicians. While telemedicine services are not reimbursed at the same level of payment as an in-person visit, efforts are underway to improve the reimbursement for such services. One limitation to telemedicine services is the fact that many rural areas lack good broadband services. According to an article by Beaton, the Federal Communications Commission (FCC) is working on providing a remedy for this situation (14). In late 2017, the FCC proposed increasing the annual funding for the Rural Health Care Program in order to improve broadband access for rural areas (15).

In 2016, the FCC partnered with the Robert Wood Johnson Foundation to form a taskforce called Connect2Health to map out rural areas that have insufficient access to broadband and correlate it with the incidence of chronic diseases (16). Wicklund reported that the results showed areas with low connectivity had higher incidence of diabetes and obesity (16). Telemedicine services can provide such benefits as wellness promotion, medication management, and healthy behaviors (14).

Efforts to improve health literacy is another step in improving the effects of the social determinants of health. Health literacy is defined as the degree to which individuals have the capacity to obtain, process, and understand basic health information and services needed to make appropriate health decisions (18). National data reveals that more than one-third of adults in the United States have limited health literacy (19). Limited health literacy leads to poorer health outcomes. Incorporating the use of basic interpretations into provider-patient visits, maintaining eye level contact, and providing educational materials to patients can help improve literacy. Breaking down language barriers by offering interpretation services during visits will also improve the level at which patients can understand their health. Using visual models to illustrate diseases and treatment plans is another method that can be incorporated into patient visits. Making patients repeat what they have learned, especially for medication instructions, can ensure understanding and promote more patient compliance.

Implementing a patient portal into an EHR system in a healthcare organization would serve to increase patient ownership of their care and health outcomes. Patient portals provide a link between the patient and the provider and could reduce the number of readmissions and emergency visits by addressing issues before they become emergent. Incorporating community resource guides into patient portals can provide the patient the empowerment to take action themselves. For example, providing a direct link to the application process for Supplemental Nutrition Assistance Program (SNAP) benefits would give the patient the ability to address nutrition needs without provider intervention. There could also be links for utility services so that patients can apply for financial assistance with utility bills, and community centers and wellness programs so that patients can be more proactive in preventive measures.

Strategies at the Community Level

Community partnerships with a healthcare organization can open up more opportunities for patients in many different ways. This can include forming partnerships with community services and forming hot spotting initiatives. Most community-based organizations rely on federal and state funding to remain sustainable. Unfortunately, this funding is not often guaranteed. Developing contracts with healthcare organizations can not only provide them with more sustainability, but it will align their missions and values with that of the organization (17). In order for these partnerships to survive, the community-based organizations must cover a wide geographical area and provide a wide variety of services to cover social determinants of health. There must be clear requirements to address the volume of services provided in order for health organizations to see a return on their investment. Getting media involved can be an effective way to inform the public about resources available as well.

Cross-sector partnerships are particularly important to address social determinants of health. A cross-sector partnership includes commitment from public, private for-profit, and/or private non-profit organizations to pool resources in effort to achieve an agreed upon goal. The Better Health Through Housing initiative, created through a partnership between University of Illinois Health and the Center for Housing and Health, is one such example (20).

This partnership grew from concern over frequent use of the emergency room (ER) by a small group of patients, many of whom were homeless. The partnership provided stable housing to these individuals in addition to supportive services to reduce ER utilization. The program saw a decrease of 42% in participants' health care costs (20).

Hot spotting initiatives between healthcare organizations and academic centers can tackle the battle between social determinants of health, improving health outcomes, and reducing healthcare costs. Hot spotting is defined as the strategic use of data to reallocate resources to a small subset of high needs, high cost patients (21). Hot spotting teams on the academic level include medical, physician assistant, nursing, social services, healthcare management, and public health students. Working with faculty advisors and in cooperation with healthcare organizations, the team can identify patients of high-risk and high utilization of services and coordinate care efforts to improve outcomes for patients. Typically, these high-risk patients have poor social determinants of health. Not only does the student hot spotting program team learn how to deal with the complex health and social needs of a patient, but their initiatives have been proven to reduce healthcare utilization and expenditures. The care given by the team is patient-centered, and the directives are developed to meet the patient's goals.

Return on Investment

In the age of value-based care, it is more important than ever for healthcare organizations to begin addressing social determinants of health in order to effectively manage the population they serve. However, Ohanian, McConnell, and Madrazo pointed out that 72% of hospitals do not have a dedicated budget to support population health initiatives such as social determinants of health (22). They further add that as many as two-thirds of healthcare organizations' electronic health records do not even screen patients for social determinants (22). Healthcare organizations are faced with limited budgets and other issues that compete for funding. Therefore, it is a necessity for healthcare leaders to be able to see a return on their investment when considering the implementation of strategies to address social determinants of health. Return on investment is an objective measure that calculates the benefits of an investment divided by the cost of the investment. It is expressed by percentage.

Ohanian, McConnell, and Madrazo suggest using hospital readmissions as a performance metric to substantiate return on investment for social determinants (22). Organizations should choose medical conditions that are directly linked with social determinants and that prove to be the direct cause of multiple readmissions. By proving that addressing SDOH can provide a cost avoidance of readmissions, an attractive ROI can be determined that will validate the need for organizations to invest in SDOH strategies. Ohanian, a senior executive at Unite US, developed a ROI tool that can easily be modified to an organization's individual needs. Ohanian (phone call, December 27, 2018) has made his ROI tool accessible to healthcare executives. The tool can be used to calculate the potential reduction in readmissions for different diagnoses. A tutorial for using Ohanian's ROI tool is also available (22).

Discussion

Many strategies exist to addressing social determinants of health both at the patient-level and community-level. At the patient-level, population health strategies focus on improving individual health outcomes, which collectively will improve health outcomes of the population. Robust population health management programs that incorporate care coordination, care management, and panel management are best suited to achieve this goal.

At the community-level, partnership is key to making significant progress in population health outcomes. Cross-sector partnerships hold particular importance to address social needs that significantly influence health outcomes. Finally, as operating margins narrow, making the business case for population health is critical. Few return on investment strategies were found in our search; however, one that holds promise is linking social determinants to a specific outcome, such as hospital admissions. Doing so can provide evidence that addressing social determinants of health is more than a step toward mission achievement.

This study focused on strategies that have already been applied in healthcare organizations to address social determinants of health. It did not assess these strategies from an empirical perspective. Future research should explore the effectiveness of each strategy outlined in this paper, particularly from a meta-analytic perspective.

In conclusion, many healthcare organizations have already shifted their focus on achieving high scores on quality of care measures by incorporating the social determinants of health into their practice. However, much more remains to be accomplished to reduce health disparities and inequities among a population. By putting efforts into battling the issues that lead patients to poorer outcomes, organizations can see a return on their investment in the form of decreased utilization of high-risk patients and the resulting decrease in overall healthcare expenditures.

Conflict of interest

Authors declare no conflict of interests.

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