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incorporating social determinants into population health management

The social determinants of health constitute a critical area of consideration for healthcare organizations embarking on population health management initiatives.

AT A GLANCE

To be able to succeed under a population health management initiative, health systems must take into account the impact of social determinants of health.

Organizations can address this critical concern by undertaking four steps:

- > Conduct a community health needs assessment
- > Collect diverse, relevant data pertaining to the population
- > Stratify patients according to risk to identify subgroups and individuals most likely to benefit from targeted interventions
- > Implement solutions based on the findings

Here is a story about two patients with diabetes:

Clinically, they look exactly alike, being 61-year-old males with identical symptoms and identical diagnoses, and with the same physicians from the same local hospital telling them they'll need to do the same thing. From the time of their diagnosis, the two men are told they must watch what they eat, prioritize exercise, monitor blood glucose, and take certain medications at certain times of day. Every three to six months, they will come in for a check-up. They will need eye exams, foot exams, and A1c lab tests. If there are signs of complications, their treatment will be adjusted accordingly.

If only care management could be so simple.

The problem is that the moment these patients walk out of their appointments, their paths will diverge and so will their prognoses. One will have the resources to manage his diabetes successfully; the other, unfortunately, will not.

Even if two people look the same on a chart, their lives are likely to differ tremendously, and it is the lives that people lead and the communities in which they live that ultimately play the biggest roles in their health.

Such nonclinical factors are now widely referred to as the "social determinants of health." The health outcomes for any given patient—or, for that

matter, for a population—don't depend only on the healthcare services delivered; they also are determined by a host of other influences, from socioeconomic status, gender, race, and ethnicity to family structure, education, and access to transportation. A clinician might suggest that a patient with diabetes change his or her diet, but if that patient lacks the means to do so, it's unlikely those changes will be made.

Consider, for example, the struggles with diabetes faced by patients in Louisville, Ky., which have captured media attention. One recent story in Louisville's local newspaper cites a "diabetes epidemic" fueled by poverty and obesity.^a The authors write:

Kentucky is plagued by all the social ills that cause diabetes to fester. Chief among them is poverty, which makes it tough to eat well, find safe places to exercise or get to the doctor and avoid complications such as blindness and amputations.

Meanwhile, the same paper also had recently reported in an unrelated article that one of the few remaining grocery stores in downtown Louisville was about to shut down.^b Supermarkets were expanding in the city's suburbs—and perhaps residents who needed to could use public transportation to get to them—but the article notes that "prospects remain slim for urban grocery shoppers."

Several things are worth noting here: First, it is obvious that depriving a person with diabetes of easy access to a grocery store that sells healthy food will pose a severe challenge for that patient in maintaining good health. Second, the type of situation described previously is not unique to Louisville or the state of Kentucky. Communities nationwide are struggling to find ways to deal with "social ills" and to address the social determinants that influence health conditions like

diabetes. Third, despite the many challenges, there is a clear path forward to finding solutions for community stakeholders, including health-care organizations that are tasked with improving the health of specific populations.

A New Imperative: Addressing Social Determinants of Health

The U.S. Centers for Disease Control and Prevention (CDC) defines the concept of the *social determinants of health* as "[t]he complex, integrated, and overlapping social structures and economic systems that are responsible for most health inequities."^c Drawing on a report by the World Health Organization (WHO) and the Commission on the Social Determinants of Health (CSDH), the CDC elaborates: "These social structures and economic systems include the social environment, physical environment, health services, and structural and societal factors. Social determinants of health are shaped by the distribution of money, power, and resources throughout local communities, nations, and the world."^d

The University of Wisconsin Population Health Institute, a program of the Robert Wood Johnson Foundation, estimates that clinical care on its own accounts for just 20 percent of a community's health outcomes.^e The remaining outcomes, the institute reports, depend on factors such as health behaviors (tobacco, alcohol, and drug use; diet and exercise; and sexual activity), the physical environment (air and water quality, housing and transit), and social and economic factors (education, income, family and social support).

Other researchers have noted the connection between the prevalence of chronic conditions in a population and the likelihood that the

a. Ungar, L., And Carter, D., "Poverty, Obesity Fuel Ky's Diabetes Epidemic," *Courier Journal*, Nov. 14, 2016.

b. Downs, J., "Kroger Closing in Shively," *Courier Journal*, Nov. 7, 2016.

c. CDC, NCHHSTP *Social Determinants of Health, Definitions*, last updated March 14, 2014.

d. CSDH, *Closing the Gap in a Generation: Health Equity Through Action on the Social Determinants of Health. Final Report of the Commission on Social Determinants of Health*, Geneva, WHO, 2008.

e. University of Wisconsin Population Health Institute, *County Health Rankings and Road Maps*, 2016.

population's members will have behavioral health issues. The National Institute of Mental Health, for example, reports that people with depression have increased risk of cardiovascular disease, diabetes, stroke, and Alzheimer's disease, in part because they may find it more difficult to do what's necessary to care for their health, such as seek care, take prescribed medication, eat well, and exercise.^f Compounding the problem, according to the National Council for Behavioral Health, these same individuals with behavioral health problems are two to three times more costly to treat than those with chronic conditions alone.^g

Under fee-for-service payment, healthcare organizations working with patients with chronic illnesses may have been less inclined to tackle the issue of social issues affecting health quality. Now, however, the focus is on *value*—and as providers increasingly accept risk-based contracts, they also assume responsibility for the cost and quality of patient care, leading to the current focus on population health management as a means of providing care both effectively and efficiently.

But effective population health management requires more than just investing in new technologies, refining clinical workflows, and cutting costs wherever possible. As the previous discussion suggests, a health system's success in such an effort depends not only on the medical services it provides, but also on all the factors influencing the health of individuals and populations. Thus, best way for the health system to embark on a population health strategy may be to assess the social determinants of health within and around its community, taking a hard look at how those issues might best be addressed.

A Path to Improved Population Health

Just as every organization will have its own approach to navigating the waters of population health management, every health system also will

find there's no one way to identify and alleviate the social-determinant care barriers their patients face. Nonetheless, there are at least four steps organizations can take to ensure the work goes as smoothly as possible:

- > Conduct a community health needs assessment (CHNA)
- > Collect relevant data pertaining to the population from a wide range of sources
- > Stratify patients according to risk to identify subgroups and individuals most likely to benefit from interventions focused on addressing social determinants of health
- > Implement solutions based on the findings

Conduct a CHNA. Although only tax-exempt hospitals are required to conduct CHNAs, such an assessment is an excellent way for any institution to take the pulse of the community it serves. A completed CHNA can provide an organization with comprehensive information about its community's current health status, needs, concerns, and challenges.^h That information can then be used to identify subgroups of people within that population who may need more help than others, for example. This information also can be combined with information gleaned from other resources that highlight areas facing community health challenges, as well as areas with the highest average levels of well-being among their populations.ⁱ

For those organizations that are new to CHNAs, the National Center for Rural Health Works offers a CHNA toolkit that simplifies the process.^j

Collect data. The CHNA will supply most organizations with a broad understanding of their community's most pressing needs. It won't, however, provide the detailed personal health information on an individual level needed to be able to implement specific interventions.

f. NIH, Chronic Illness & Mental Health, accessed Feb. 10, 2017.

g. National Council for Behavioral Health, "The Business Case for Effective Mental Health Treatment," accessed Feb. 10, 2017.

h. See CDC, Community Health Assessments & Health Improvement Plans, State, Tribal, Local & Territorial Public Health Professional Gateway, last updated Nov. 9, 2015.

i. See, for example, the Gallup-Healthways Well-Being Index.

j. National Center for Rural Health Works, "Community Health Needs Assessment."

The good news is that most organizations are variously able to access such data—including clinical and social-behavioral information—through their electronic health records (EHRs) and other sources such as public health and weather data. Combined, these sources might include, for example:

- > Structured clinical data from the EHR (dates, patient names, diagnosis codes)
- > Unstructured EHR data (hand-written, typed, or dictated notes and case reports)
- > Data collected at the front office through questionnaires and health-risk assessment forms
- > Household income data from welfare and food-stamp programs
- > Data from health, disability, and unemployment insurance records
- > Information about patients' living situations (e.g., whether they are homeless, or if they rent or own a home; family members and ages)
- > Data from city or county building reports on potential environmental hazards (e.g., lead paint or mold in houses)

- > Prescription-fill records
- > Geographical data, such as distance a patient must travel from home to the nearest grocery store or pharmacy

Health systems looking for further guidelines can refer to the National Committee for Quality Assurance's (NCQA) comprehensive health assessment standards for patient-centered medical homes (PCMHs).^k The NCQA encourages organizations to conduct patient assessments that include or gather data on nonclinical elements. As the PCMH practice gathers this information routinely, it can be mined for population and individual patient attributes to better inform physicians and care teams. Examples of items recommended by NCQA include:

- > Age- and gender-appropriate immunizations and screenings
- > Family/social/cultural characteristics and living situation
- > Communication needs
- > Medical history of patient and family
- > Advanced care planning
- > Behaviors affecting health
- > Mental health/substance-use history of patient and family
- > Developmental screening
- > Depression screening
- > Assessment of health literacy

Addressing Social Determinants of Health: A State Initiative

A prime example of how health systems can effectively address social determinants of health in the context of managing the health of populations is the Vermont Blueprint for Health.^a This state-government program was created as a way to improve outcomes and control costs for patients with chronic conditions. The program integrates health care with social services by helping patient-centered medical homes collaborate with community health teams (CHTs) comprising nurse coordinators, social workers, dietitians, and others. A September 2015 study reporting on the initiative's performance found that the medical homes supported by CHTs spent \$482 less per patient over two years compared with practices that didn't use CHTs.^b The savings were a result of fewer hospitalizations because the social services the patients received reduced their need for medical care.

a. Department of Vermont Health Access, Vermont Blueprint for Health, 2017.
 b. Jones, C., Finison, K., McGraves-Lloyd, K., Tremblay, T., Mohlman, M.K., Tanzman, B., Hazard, M., Maier, S., and Samuelson, J., "Vermont's Community-Oriented All-Payer Medical Home Model Reduces Expenditures and Utilization While Delivering High-Quality Care," *Population Health Management*, June 2016.

Stratify patients based on risk. Once a healthcare organization has aggregated all data at its disposal, it can use "big data" techniques such as risk stratification to identify individuals and populations most likely to benefit from targeted interventions. This process is best accomplished using an integrated framework of specialized analytic tools that can quickly and efficiently produce criteria-defined patient lists matched with clinical, financial, and operational information. These lists can then be sorted and filtered to classify patients by their functional abilities, insurance status, housing situation, and other characteristics—and referenced by providers on the front lines of care. And as machine learning

k. NCQA, Patient-Centered Medical Home (PCMH) 2014, training slides, 2014.

and cognitive analytics read and evaluate unstructured data through natural language processing, risk stratification and patient profiling will become even richer and more precise.

Implement solutions. The final turn on the road to incorporating social determinants data into population health management involves implementing solutions that meet the needs of individual patients—in effect, personalizing treatment and care plans. The extent to which these solutions will be effective depends on how well the healthcare organization can identify and tap into the “who, what, when, and where” of each patient’s care and social networks—identifying, for example, various physicians, social workers, and other professional caregivers, as well as family members, neighbors, and friends. Simply put, the whole process should be about making every effort to get a sense of the challenges patients face in getting to their appointments, putting food on the table, and taking their medications. Healthcare organizations should investigate the fabric of patients’ daily lives, and the clinical and nonclinical hurdles that stand between them and better health.

In addition, care teams should embrace community resources whenever possible, whether it’s a food-stamp program run through a local farmer’s market, health and fitness programming from the regional YMCA, or an addiction recovery-focused offering from a credible resource. Strong partnerships with other community stakeholders are the key to success in this line of work. No healthcare organization can do everything on its own.

Once providers and the community are working together, service-delivery teams and resources can be matched to individual needs. If a patient has trouble getting to appointments, for example, the patient’s care team might include a transportation coordinator. Or someone with a history of drug addiction might benefit from the services of a substance abuse counselor, perhaps even colocated in the primary care practice. The various professionals who make up the patient’s team should meet regularly to coordinate their work (or communicate via teleconference or other channels if they are based in disparate locations) and to update one another on any setbacks or progress.

Better for Patients, Providers, Communities, and the Bottom Line

Today, more than ever before, we have the ability and incentives to systematically collect and utilize information about our communities and our patients related to critical nonclinical factors that impede individuals’ ability to improve their health and, as a consequence, prevent populations from demonstrating improved outcomes. Incorporating social determinants data into the care planning equation can make the difference between good health and avoidable high-cost care for patients with diabetes whose similarities are only clinical. ■

About the author



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