



# Addressing the Social Determinants of Health with Cloud-Based Data Strategies



## INTRODUCTION

Healthcare organizations face ever increasing pressures as they try to rapidly adapt in markets and implement new service models, reduce spending, drive better patient outcomes, and improve the health of populations.

Employers, government and private payers, and consumers are demanding new reimbursement structures that emphasize value, prevention, and smart utilization of resources. Health organizations are responding by creating new data-driven partnerships, allowing providers, payers, employers, and life sciences companies to coordinate care, share actionable insights and demonstrate value.

From patient risk stratification driving cutting-edge machine learning algorithms to innovative patient engagement technologies that keep individuals adhering to treatments, providers and payers are finding that the right data at the right time can be invaluable for meeting ambitious clinical and financial goals.

But in order to ensure that clinical staff are well-equipped to address the holistic needs of every individual, organizations must have access to as much information about their patients and beneficiaries as possible.

Increasingly, this quest is leading stakeholders to peer outside the walls of the clinic or hospital and examine the social determinants of health (SDOH) in more detail.

The World Health Organization [defines](#) social determinants as “the conditions in which people are born, grow, work, live, and age, and the wider set of forces and systems shaping the conditions of daily life.”

These critical socioeconomic factors, such as access to transportation, health literacy, food access, and housing stability, can make the difference between a patient successfully managing a chronic disease and that same individual being lost to treatment.

“Everyone who is paying for care or providing care wants higher quality and better outcomes,” said Scott Whyte, Chief Strategy Officer at ClearDATA. “And that means realizing that most clinical care cannot be successful in

isolation. Social and economic issues play an enormous part in a person’s outcomes.”

Clinical care may only be responsible for between 10 to 20 percent of modifiable contributions to outcomes, according to commonly cited [industry estimates](#). Eighty to 90 percent of outcomes can be attributed to an individual’s upbringing, education, cultural history, living situation, and economic status.

“If we really want the best outcomes with the lowest cost, then we have to look at social determinants of health,” Whyte stressed.

Collecting, storing, and sharing this data is a monumental challenge for an industry that is still working through many of the basics of technology adoption. Social determinants data is often complex, highly fragmented, and extremely sensitive.

“There are elements of culture, income, and education that can be very difficult to collect, especially from individuals who don’t feel comfortable talking to their providers about these issues,” noted Whyte.

“They’re not necessarily comfortable with the idea of having the data reported, consolidated, and shared with unfamiliar entities, either. It can be a real challenge to collect accurate SDOH information, and an even greater one to standardize and share that data in an effective manner.”

Extracting actionable insights from these datasets is a complicated proposition for organizations still progressing along the data analytics maturity curve.

Yet stakeholders could take advantage of particularly promising opportunities for working with social determinants data if they embrace another successful industry strategy: relying on the cloud.

Cloud-based digital engagement and analytics applications offer the flexibility, scalability, and affordability that healthcare organizations need in order to engage in effective patient management initiatives while generating actionable insights about the populations under their care.

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## NAVIGATING THE CHALLENGES OF AN INDUSTRY IN FLUX

The healthcare industry is changing rapidly under the influence of new financial pressures and stiff competition from unexpected entrants into the field.

While estimates of how quickly value-based care is taking hold can vary significantly, participants in the pay-for-performance ecosystem agree that access to clean,

complete, accurate, and timely data is a non-negotiable factor of success.

In a [September 2017 survey](#) conducted by Humana and HFMA, more than 70 percent of senior executives and financial leaders stated that interoperability and data exchange competencies are vital for achieving their value-based care objectives.

Fifty-four percent added that real-time access to data would become increasingly important over the next three years as providers and payers collaborate much more closely to manage populations, get upstream of chronic diseases, and address the social determinants of health.

Shifting incentives have brought these entities into closer strategic alignment, requiring more transparency and collaboration—and more seamless access to data that can inform cost-effective care delivery.

“From a business perspective, healthcare is becoming much less siloed than it used to be. The previously established roles of stakeholders such as pharma, life sciences, payers, and providers are starting to blend in very exciting and innovative ways,” Whyte observed.

Recent mergers, acquisitions, and partnerships—such as the CVS-Aetna merger, Amazon’s foray into healthcare with JPMorgan Chase and Berkshire Hathaway, and Optum’s purchases of healthcare provider groups—indicate that scale and scope aren’t the only motivations for blurring traditional lines.

“These entities aren’t just coming together to expand their market share, no matter how attractive that prospect might be,” added Whyte.

“They’re joining together because of data. They need access to more data if they are going to achieve their objectives, many of which revolve around getting

upstream of costly chronic diseases by caring for individuals much more holistically. It doesn’t matter if you’re a provider or payer, you need data to support population health management and value-based care.”

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—Scott Whyte  
Chief Strategy Officer  
ClearDATA

Not every provider and payer will be looking to purchase a rival or merge with a partner to retain a competitive edge, but entities may be able to see similar strategic gains in transparency, data access, and collaborative insights by focusing on aggregating their data assets in a silo-free, cloud-based environment.

“Value-based care requires so much movement of data: between payers, providers, CMS, community groups, researchers, and so many more players in a very interconnected ecosystem,” explained Whyte. “Connecting those assets to the degree permitted by privacy regulations can unlock some astonishing insights into population health that can be applied to clinical care or payment model design.”

“Cloud-native platforms allow organizations to punch above their weight in a very competitive atmosphere and truly get ahead of the root causes of chronic illness.”

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## LEVERAGING THE CLOUD FOR ACTIONABLE ANALYTICS

Socioeconomic circumstances can dramatically influence an individual’s risk of developing certain chronic conditions, experiencing injuries from domestic or community violence, or failing to recover full function after a hospital stay.

Marked ethnic and racial disparities, many of which are tied to the communities in which non-white individuals live and work, also dramatically influence costs and outcomes. Centers for Medicare and Medicaid Services (CMS) [data](#) indicates that in some states,

black individuals are more than five times likelier to be hospitalized for [hypertension](#) than non-Hispanic white patients and are significantly more expensive to treat during their hospital stays.

Black patients are also much less likely to have access to preventive care and screenings, such as regular blood pressure checks, that can help to control hypertension before it contributes to an acute event. Hispanic and Latino individuals also experience certain chronic diseases at higher rates than white individuals. Diabetes,

for example, is nearly twice as prevalent in Hispanic/Latino patients than in white populations, according to the [HHS Office of Minority Health](#). Hispanic and Latino diabetics are also dramatically more likely than white individuals to require treatment for end-stage renal disease related to diabetes and to experience lower limb amputations.

But while the industry has access to data on outcomes, stakeholders do not yet have similar insights into how to systematically address the underlying factors that contribute to disparities in health and spending.

Assessing these risks, closing these gaps in preventive care, and creating predictive alerts to inform decision-making are key goals for technology developers, insurers, and care providers.

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—2017 HFMA Executive Survey: Value-Based Payment Readiness

"If we can use the data we're collecting to help clinicians and even patients get ahead of these risks, then providers will be able to have much more meaningful discussions with individuals about the particular challenges in their lives," said Whyte.

"Narrowing and eliminating those socioeconomic gaps while also enabling providers to close gaps in care, such as screenings or chronic disease management needs, is going to require innovation and novel approaches to working with huge volumes of data."

Collaboration across the care continuum will be at the center of these efforts. Both payers and providers hold important pieces of the socioeconomic puzzle, but neither has all the answers.

Payers generate claims data, which can help to create longitudinal portraits of an individual's spending and utilization patterns across multiple settings of care. Meanwhile, providers are the source of clinical notes, diagnosis codes, imaging reports, and other elements that can bring depth and clarity to a patient's healthcare history.

In a fee-for-service, volume-driven landscape, payers and providers have strong business incentives to keep these datasets private. But in the world of value-based care, where stakeholders only benefit if they work together, trust has become the new competitive differentiator.

"Trust goes hand in hand with common goals," Whyte stressed. "If you have common goals, you need to share—and if you're going to share, you need to trust."

"The cloud is a great place for that. It can become neutral territory for organizations to work together: it's not my data center and it's not your data center, it's a safe zone where we can work together without some of the competitive issues that come from the idea of owning a data asset."

For providers without extensive resources on hand, the cloud also offers a flexible, scalable, and cost-effective proving ground for new ideas.

"You don't have to make a massive investment in computing power and storage before you can get started with meaningful analytics, and you don't have to limit yourself to what you planned at the beginning of the project if you end up needing more capacity later on," said Whyte. "The tools are often readily available as soon as you sign up, and you can spin up your projects very quickly and easily."

Organizations can also feel confident that their data will be held securely.

In an environment fraught with data security challenges, providers may find themselves struggling to devote adequate resources to securing their on-premise data. Sharing much of that burden with a HIPAA-compliant cloud provider and business associate (BA) can allow organizations to reallocate funds to other high priorities.

"A cloud provider simply has far more resources and capital to invest in security and up-time availability than the average hospital," said Whyte. "This is what cloud providers do. They aren't splitting their focus with anything else, or divvying up their resources to manage other business problems simultaneously."

"If I'm a payer or provider who needs to store my very sensitive data somewhere, I'm going to want to make sure that security is the number one priority for my storage partner. For cloud providers, that's absolutely the case."

The security expertise of cloud providers, combined with their scalability and flexibility to innovate, could be game-changing for organizations that do not have



a capacity to build, maintain, and continually develop analytics infrastructure to support population health.

"Cloud services give organizations the resilience and reliability that they must have in order to care for

patients effectively," Whyte said. "Those are capabilities that would be harder and more expensive for a healthcare organization to oversee on its own."

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## ACHIEVING THE PROMISES OF PROACTIVE POPULATION HEALTH MANAGEMENT

Without focusing on the social determinants of health, providers and payers may find that their investments in population health management programs are less than optimally effective.

"The costs of avoiding the topic of social determinants of health are very high," Whyte asserted. "Yet the return on investment for us as a country if we tackle these issues could be much higher."

Evidence is mounting that these returns can be financial as well as social.

In a [study](#) published in 2018, a payer was able to reduce spending by 11 percent after implementing a social referral program that helped individuals connect to community services such as heating fuel assistance, nutrition support, and transportation to medical appointments.

HealthConnections, a program from WellCare Health Plans, created a self-referral program that encouraged individuals to identify their own social needs and used a team of experienced care coordinators to facilitate the delivery of community-based services.

As a result, the plan saw mean spending per individual drop even more significantly in high-risk, high-needs populations, such as Medicaid managed care beneficiaries and groups of patients with multiple chronic conditions. The program relied on online databases to identify appropriate services that are easily accessible to members of the community, the study added.

HealthConnections' databases include hundreds of organizations offering more than 60 categories of community services, allowing care coordinators to easily communicate with social service providers while following up with individuals to ensure their needs are being met.

Combining data-driven insights with high-touch, personalized communication, such initiatives are an important step for providers and payers looking to focus their efforts on achievable, highly impactful goals.

"Generating proof points is extremely important for advancing public dialogue about what we can do as an industry to equip patients with the services and knowledge they need to overcome the social and economic realities these individuals are facing," Whyte said.

Identifying successful strategies and translating those achievements into best practices is an ongoing process that will be vital for success in a value-based world.

"We are only going to be able to meet our clinical and financial objectives if we liberate our data, develop those trusting relationships, and embrace the incentives that are starting to drive much more proactive, population-based care," stressed Whyte.

"The cloud is absolutely the logical place to facilitate this experimentation, support payers and providers as they start to rely more heavily on population health insights, and foster the trust that we need as an industry to truly deliver holistic care to patients."

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