The juice is worth the squeeze: How efforts to address social determinants of health pay off

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Abstract The healthcare industry is increasingly investing in initiatives upstream of the site of care to address broader population health issues and the downstream economic impacts of social determinants of health (SDOH). Organisations continually struggle, however, to define how to support a business case of high-impact, sustainable SDOH efforts. PricewaterhouseCoopers (PwC) used publicly available data to conduct a diagnostic assessment of prominent healthcare providers' existing 'upstream interventions' and produced a maturity score that reflects the success of these providers' SDOH initiatives. This paper details three industry examples of leading 'upstream interventions' and examines the efficacy of each example in addressing SDOH. While healthcare providers can approach SDOH from a multitude of dimensions, their primary focus to support their business case should be formulating a strategy around their unique strengths relative to competitors in the context of the communities they serve. Further, providers that fail to prioritise SDOH run the risk of falling behind those who do push upstream initiatives, as costs of care continue to rise and brand recognition as a community leader becomes increasingly important.

KEYWORDS: social determinants of health, population health, upstream intervention, community health

SOCIAL DETERMINANTS OF HEALTH INTRODUCTION

The term health encompasses much more than taking one's diabetes medication or going to the gym; there are a variety of factors such as clinical care, health behaviours, social and economic factors and physical environment that contribute to one's health and well-being. Eighty per cent of an individual's health is determined by the latter three factors, which make up the SDOH.[1] SDOH are defined as the conditions or circumstances where people work, live and play that impact health and health decision-making. Individual health behaviours include tobacco consumption and alcohol use, diet and exercise and sexual activity. Social and economic factors range from education and income to employment, while one's physical environment is shaped by factors such as housing, transportation and pollution.[2]

With the healthcare industry's growing awareness and understanding of the impact social determinants have on health outcomes, coupled with the gradual shift towards value-based care, many healthcare organisations and federal agencies are investing time and resources in initiatives to address these SDOH. For example, Centers for Medicare & Medicaid Services (CMS) established the Center for Medicare & Medicaid Innovation (CMMI) 'Accountable Health Communities' model, which focuses on connecting high-risk beneficiaries with community services that would address social determinants and mitigate health disparities. In addition, a number of states, including Colorado, Oregon, California and New York, have recently spearheaded delivery and payment reform initiatives to integrate physical, behavioural and social services for Medicaid members. New York's delivery system reform incentive payment (DSRIP) waiver led to the creation of more than 25 performing provider systems (PPS) that promote collaboration between providers and community organisations to address Medicaid beneficiaries. DSRIP funds are distributed to New York PPS to liaise with community-based providers serving large numbers of Medicaid beneficiaries; these funds incentivise partnership and cross-organisation support to target population health outcomes.[3]

Many healthcare organisations begin their journey in addressing the SDOH needs of the communities they serve by starting with an assessment of the population focused on demographics, social needs and health status. For many organisations, this occurs in the form of a community health needs assessment (CHNA). The Affordable Care Act requires not-for-profit hospitals to collect data on health outcomes and health determinants every three years to analyse and interpret for action.[4] As part of the CHNA, organisations identify resources that might enhance community outreach and mitigate identified disparities. An assessment, however, is just one aspect of addressing a population's health needs. Other factors — such as continuous data collection, standardised measurement and reporting, collaboration and partnership, innovation and communication — are important considerations for healthcare organisations aiming to impact social determinants.

SDOH have influence beyond health outcomes, with related economic impacts as well. Healthcare providers, hospitals and insurers are increasingly recognising the need to invest upstream of the site of care to mitigate the chances of SDOH driving health disparities. To optimise impact when investing upstream, however, healthcare organisations should first understand the primary dimensions or levers to target.

REAL EXAMPLE OF SDOH IMPACT

Let us explore the potential impacts of SDOH and exactly how upstream interventions can mitigate root causes through an individual example. Imagine

a 45-year-old Black woman living in Chicago. Let us call her Janelle. Janelle has her General Educational Development (GED) certification and works in the hospitality industry. She is saving money to move to an apartment within walking distance of a grocery store; the neighbourhood she has lived in for the past ten years does not have an affordable grocery store nearby, and the nearest option requires a 30-minute bus ride. Saving, however, is near impossible lately, as she has recently been diagnosed with breast cancer. With a high-deductible health plan and low income, she must make a choice between pursuing cancer treatment and paying for housing and food.

What Janelle does not know is that she has a 60 per cent higher chance of dying of breast cancer than a white woman of the same age with the same illness.[5] Looking more closely at the SDOH at play in her life reveals compelling explanations for this health disparity:

- **Food security:** This woman lives in a food desert, an area that lacks access to affordable fruits, vegetables, whole grains, low-fat milk and other foods that make up the full range of a healthy diet.[6] As a Black woman lacking access to affordable, nutritious food, she is more likely to be obese than her white counterpart, and obesity is a risk factor for breast cancer.[7]
- **Health literacy:** As a Black woman, Janelle is less likely to have received education and materials on common cancer risk factors than her white counterpart.[8] This health illiteracy can lead to behaviours that carry high cancer risk factors such as poor nutrition, less frequent cancer screenings and longer intervals between diagnosis and treatment.[8]

These are just a few SDOH examples resulting in higher rates of breast cancer mortality for Black women, as in this example. This is not to say that SDOH impact only Black women; SDOH such as food security and health literacy can affect health outcomes for any individual or community.

For each one of these determinants, the opportunities exist for communities and organisations to intervene to reduce the likelihood that these factors contribute to further health disparities. What if Janelle had a free breast cancer screening clinic in her neighbourhood? Perhaps she would have diagnosed her cancer earlier and increased her chances of survival. What if an affordable grocery store opened in her neighbourhood? Maybe she would not have had to rely on the unhealthy foods that contribute to her risk of cancer. What if, earlier in life, she had been educated on the importance of preventive care (eg early screenings) and taught the fundamentals of health insurance? She could have possibly taken steps to mitigate these risk factors in the first place by prioritising preventive care.

DIAGNOSTIC OVERVIEW

Considering the example of Janelle's story, there are multiple interventions that healthcare organisations can pursue to meet their needs and improve community health. To better understand how health organisations can address SDOH, PwC conducted a diagnostic assessment of prominent healthcare providers' existing 'upstream interventions.' To do this, publicly available data was applied to a nine-dimension, weighted assessment to produce a maturity score that illustrates the success of each provider's efforts to address SDOH in its community. Each maturity score was further analysed to generate the main strengths and opportunity areas for that provider. The framework dimensions and sample questions considered when conducting the diagnostic assessment include[9]:

Dimension	Dimension Consideration	Diagnostic Scan Sample Questions
Commitment	CEO engagement, health equity-related committee	What level of engagement/support has been displayed by the CEO? Has there been a committee/council created to address health equity/SDOH/community health issues?
Investment	Percentage of total expenses going towards community benefit	Does the organisation demonstrate a sustained SDOH investment and leadership or board focus, tying business results to mission and vice versa?
Strategy	Initiatives tied to community needs and linked to company strategy	Are the organisation's interventions informed by analytics on social and environmental determinants, healthcare disparities and health disparities?
Measurement	Key performance indicators (KPIs) span beyond just number reached, programmes regularly evaluated, learnings regularly incorporated	Do KPIs for community benefit or SDOH programmes include health outcomes and return on investment (ROI)?
Collaboration	Community-based partnerships, member of important industry collaborations (eg National Health Plan Collaborative)	What is the organisation's approach to community-based organisation partnerships and cross-sector collaboration?
Catalyst	Thought leadership publication and participation at external SDOH conferences	Does the organisation participate in SDOH research initiatives and contribute to thought leadership publications?
Innovation	Pilot programmes to impact upstream issues	Does the organisation experiment with pilot programmes or other methods of improving upstream issues?
Integration	SDOH goals across front- and back-office functions (eg diverse hiring, eco procurement)	Does the organisation integrate an SDOH/health disparities focus in functions across the enterprise (eg care management programmes, customer experience, procurement, sales, marketing, HR, analytics and IT business functions)?
Transparency	Internal and external communication about community benefits	How does the organisation communicate its community benefit or health equity message?

Recognising that the data utilised is at a point in time and that there is no 'one-size-fits-all' approach for addressing SDOH in communities, the following industry examples illustrate leading practices. The data collected for these industry examples focused on traditional healthcare providers; however, the diagnostic framework and SDOH guiding principles can be extended to other aspects of the healthcare industry as well. This in-depth analysis and PwC's experience with clients from leading organisations across the healthcare spectrum demonstrate how organisations that adhere to specific guiding principles generate the most sustainable community health impact. Organisations that seek to approach this work by addressing root SDOH causes, rather than just symptoms, foster mutually reinforcing strengths across their portfolio of health-care services that support a business case of high-impact, cost-effective upstream interventions.

INDUSTRY EXAMPLE #1 — COLLABORATION AND MEASUREMENT DIMENSIONS

Collaborations and partnerships are strategies that healthcare organisations can deploy to focus on their unique strengths while addressing community health needs. A study conducted in 2018 by a national health insurer found that

one managed care organisation reduced the number of unhealthy days by 9 per cent for its San Antonio community through a combination of clinical and community partnerships, the establishment of an advisory board and subcommittees and the development of resource guides for the community.[10] Similarly, in a 2014 study by Centers for Disease Control and Prevention (CDC) researchers, multisector partnerships were reported to achieve 'short-term outcomes and create public value by better coordinating the services and assets of partner organisations, offering comprehensive approaches, and focusing on policy, system, and environment changes that contribute to improvements in population health.'[11] Based on PwC's diagnostic review, healthcare providers who partnered with community-based organisations and supplemented their services with flagship cross-sector collaborations (eg ride-sharing) had more developed SDOH upstream intervention techniques that allowed providers to tailor their service offerings to meet the needs of their patient population and capitalise on mutually beneficial community-based partnerships.

Take, for example, a regional, integrated academic medical centre with 2,500-plus beds in the north eastern United States. This provider directly engaged in advancing the health and well-being of its communities and neighbours through a set of departments and programmes focused on community organisations, community-based health and social service programmes, education events, DSRIP, the accountable care organisation and community service plans. This provider established a centre for community health that provides peer-based support in community settings to promote health-care self-management. In this example, the provider established infrastructure and organised its initiatives around its community by targeting multiple local organisations via outreach and partnership. This multipronged approach supported by organisational infrastructure allowed the provider to extend its patient footprint and population management scope, exhibiting leading practices in collaboration.

Data quality, access to data and standard frameworks to assess data are all important for consistent measurement across organisations. Without consistent and standard frameworks, measurement across organisations is difficult to accomplish. To this end, the National Center for HIV/AIDS, Viral Hepatitis, STD, and TB Prevention (NCHHSTP) conducted a symposium to raise awareness of the importance of data in researching and altering the role of SDOH on health outcomes.[12] PwC has found that providers who regularly monitor and evaluate programmes against established KPIs (eg through predictive analytics), who incorporate KPIs spanning programme reach, health outcomes and ROI (eg medical costs avoided), and who regularly synthesise quantitative data and qualitative insights from provider, member and community partners may have better upstream intervention techniques with more expansive community reach.

In the previous provider example, this organisation conducts a mandatory health needs assessment every three years and leverages quantitative and qualitative data, along with input from community representatives, to examine factors affecting its communities. Assessment data and analysis contributes to the development of plans focused on promoting mental health and preventing chronic diseases, substance abuse, HIV, STDs and vaccine-preventable diseases. Progress is publicly reported on an annual basis against defined performance indicators that include both health outcomes and persons served. In both examples related to collaboration and measurement, the healthcare provider tailored upstream intervention techniques

to address the SDOH affecting its patient population and community. At first glance, data collection and measurement may seem like table stakes in the environment of healthcare's 'new normal'; however, collecting the right data and transforming that data into intelligence that benefits the community served has the potential to be a game changer. With a constantly changing patient population impacted by SDOH, providers will need to put social determinants in the forefront to address the 'health' of their communities rather than focusing solely on the 'health care' of their patients.

INDUSTRY EXAMPLE #2 — INVESTMENT AND INNOVATION DIMENSIONS

Investment is another dimension that healthcare organisations can consider when addressing SDOH, whether internal or external to the organisation. One type of investment is place-based investment, which is defined as the opportunity to 'create economic and social outcomes through investing in a specific region or community, particularly those experiencing decline or disadvantage.'[13] By definition, place-based investments are focused on creating sustained economic development in an immediate community and can be seen in efforts targeting affordable housing, job creation, education and other social programmes. Healthcare providers recognise that investments in affordable housing correlate with better health outcomes. A study, in 2015, of Massachusetts Medicaid members found that urban homelessness was correlated with preventable emergency department visits and hospitalisations even when controlling for health insurance coverage.[14] In Minnesota, public, private and government partners came together with a large healthcare organisation to develop a community land trust to permanently preserve affordable housing for community members.[15] In this example of place-based investment, these organisations recognised the importance of affordable housing and the impact it could have on a broader community. This example as well as many others demonstrates that the dimensions mentioned so far are not independent but work in concert with one another to mutually support the health outcomes for all those involved.

A broader examination of investment shows that healthcare organisations benefited from higher-impact upstream interventions when they (1) demonstrated a sustained SDOH investment as well as a leadership or board focus tying business results to mission and vice versa and (2) contributed a percentage of total expenses to community benefit efforts. Take, for example, a multistate network of hospitals and occupational and urgent care facilities with more than 8,500 acute care beds. The network funded grants to community organisations to address chronic conditions such as obesity, invested in infrastructure such as housing and established a social innovations grant for entrepreneurs who want to tackle community health improvement in low-income neighbourhoods. As evidenced by this example, investment does not need to be focused solely on provider operations but can be more broadly focused in multiple areas that impact the provider's patient population and community.

Innovation is another dimension for healthcare organisations to consider — and it does not always have to be associated with technology. From PwC's provider assessment, most healthcare organisations that experimented with pilot programmes, and those that had a dedicated upstream innovation strategy and/or operating model, had the best demonstrated upstream innovation outcomes for their patient populations. There are multiple innovation examples, such as state-led Medicare and Medicaid programmes through CMMI, that are addressing community needs related to

SDOH. The CMMI state innovation models initiative provides financial and technical support to a number of states to develop and test state-led, multi-payer healthcare payment and service delivery models that aim to improve health system performance, increase quality of care and decrease costs.[16]

The previously mentioned multistate provider network focused on scaling three to five innovations across its health system annually and considered how it could bring innovation to all patients and payer mixes. While the innovations were focused on community gardens, housing, education and art, there was a direct and explicit commitment to experimenting with new ways to address the social determinants in the context of each community where the provider delivered care.

INDUSTRY EXAMPLE #3 — COMMITMENT DIMENSION

A healthcare organisation's culture of commitment and leadership engagement can play critical roles in addressing community health needs. In 2016, one hospital organisation's multiyear, multifaceted strategies on food security, led by a CEO passionate about SDOH, had a significant impact on the health outcomes of its patients.[17] Over the past decade, this CEO and hospital leaders examined and acted upon the income and obesity status of the communities they serve by completing screenings for food insecurity and other social factors, making site visits to understand a neighbouring organisation's food-support programme and working with community and business leaders to supply food for those at-risk patients. Among Medicaid patients screened and referred, the hospital found that emergency department usage dropped 3 per cent, readmission rates dropped 53 per cent and primary care visit rates increased 3 per cent.

Healthcare leaders understand the role housing plays in health status and outcomes and are beginning to drive investments and collaborations that are necessary to invoke change. An examination of targeted interventions integrating housing and health services demonstrates the pivotal role healthcare organisations with committed leaders play and the impact that each of them has on its community.[18]

An organisation's investments, partnerships and innovation strategies are only as strong as its leaders' commitment to community health impact and a governance structure that promotes change. Expressed commitment by leadership and organisational design can be pivotal in generating and sustaining long-term SDOH upstream interventions.

OTHER CONSIDERATIONS

The industry examples highlighted in the preceding section demonstrate how healthcare organisations can leverage different strategies to address SDOH. The common thread in these examples is the breadth of focus and the corresponding interventions. These examples demonstrate that in order to significantly improve the health status of communities, organisations must broaden their definition of health care. No longer does healthcare refer solely to what takes place within the four walls of the hospital. In the contemporary landscape, health care refers to the entire spectrum of human interaction within the social and physical environment.

While broadening the scope of an organisation's understanding of health care may seem daunting, it is important to realise that many organisations already possess the building blocks required to make this shift in strategy. One essential element required to tackle any healthcare-related problem is reliable data. With problems as far-reaching and nuanced as SDOH, healthcare organisations need to be able to connect the dots and identify the correlations. The impacts of SDOH and the effectiveness of upstream interventions rely upon taking data

sets out of silos and identifying the ways they can interconnect. High-quality quantitative and qualitative data enables healthcare organisations to identify, target and monitor the impacts of their interventions. Rather than simply relying on patient zip codes to mail hospital bills, providers must begin to realise that patient zip codes could be an important indicator of lack of access to care or cyclical hospitalisations.[19]
To tackle SDOH head on, the first step for healthcare organisations may not be assessing community need but accepting the contemporary definition of healthcare and identifying the existing intervention capabilities that they already possess. This does not mean that any single healthcare organisation needs to take on SDOH alone. The resolution of an issue this broad requires the collaboration and capabilities of organisations from across the healthcare, community and technology arenas.

CONCLUSION

The shift in trends towards value-based care is bringing healthcare organisations under increasing pressure to extend their reach beyond the confines of the four walls of the hospital or clinic. Whether the underlying issue is one of market competitiveness, financial stability or mission-driven change, there are a host of reasons to pursue initiatives addressing the root causes of SDOH and to embark on treating community health holistically. Healthcare organisations should consider their unique strengths relative to those of their competitors in the context of their population. Through this intersection, organisations can deploy a multipronged SDOH approach that drives sustainable upstream interventions. Healthcare organisations that are slow to evolve towards addressing SDOH run the risk of being leapfrogged or of lagging behind those who do push upstream initiatives. They may see worse patient outcomes, higher cost of care and missed opportunities to gain brand recognition as community leaders.[20] Healthcare organisations have traditionally dealt only with sick care before gradually moving to clinical preventive care. The challenge that lies ahead is moving towards treating the whole person by addressing SDOH.

Notes and References

1. PwC. (2018) 'The case for intervening upstream: Why addressing social determinants of health is the right thing to do, for your mission and your business', available at: https://www.pwc.com/us/en/health-industries/health-services/assets/the-case-for-intervening-upstream (accessed 24th July, 2019).
2. Hood, C. M., Gennuso, K. P., Swain, G. R., & Catlin, B. B. (2016) 'County health rankings: Relationships between determinant factors and health outcomes', *American Journal of Preventive Medicine*, Vol. 50, No. 2, pp. 129–35, available at: https://www.ncbi.nlm.nih.gov/pubmed/26526164 (accessed 7th March, 2019).
3. Felland, L., Lipson, D., & Heeringa, J. (2018) 'Examining New York's delivery system reform incentive payment demonstration: Achievements at the demonstration's midpoint and lessons for other states', available at: https://www.medicaid.gov/medicaid/section-1115-demo/downloads/evaluation-reports/ny-dsrip-case-study.pdf (accessed 14th March, 2019).
4. U.S. Department of the Treasury. Internal Revenue Service. (n.d.) 'Community health needs assessment for charitable hospital organizations–Section 501(r)(3)', available at: https://www.irs.gov/charities-non-profits/community-health-needs-assessment-for-charitable-hospital-organizations-section-501r3 (accessed 14th March 2019).
5. Hunt, B. R., Whitman, S., & Hurlbert, M. S. (2014) 'Increasing Black:White disparities in breast cancer mortality in the 50 largest cities in the United States', *Cancer Epidemiology*, Vol. 38, No. 2, pp. 118–123, available at: https://www.ncbi.nlm.nih.gov/pubmed/24602836 (accessed 17th July, 2019).
6. Centers for Disease Control and Prevention. (2017) 'A look inside food deserts', available at: https://www.cdc.gov/features/fooddeserts/ (last modified 21st August, 2017; accessed 17th July, 2019).
7. Centers for Disease Control and Prevention. (2018) 'What are the risks factors for breast cancer?', available at: https://www.cdc.gov/cancer/breast/basic_info/risk_factors.htm (last modified 11th September, 2018; accessed 17th July, 2019).
8. *Ibid*, ref. 5 above.
9. Non-exhaustive list of assessment questions.
10. Cordier, T., Song, Y., Cambon, J., et al. (2018) 'A bold goal: More healthy days through improved community health', *Population Health Management*,

Vol. 21, No. 3, available at: http://doi.org/10.1089/pop.2017.0142 (accessed 17th July, 2019).
11. Zahner, S. J., Oliver, T. R., & Siemering, K. Q. (2014) 'The mobilizing action toward community health partnership study: Multisector partnerships in US counties with improving health metrics', *Preventing Chronic Disease*, available at: http://dx.doi.org/10.5888/pcd11.130103 (accessed 17th July, 2019).
12. Dean, H. D., Williams, K. M., & Fenton, K. A. (2013) 'From theory to action: Applying social determinants of health to public health practice', *Public Health Reports,* Vol. 128, Suppl. 3, available at: https://www.ncbi.nlm.nih.gov/pmc/articles/PMC3945442/ (accessed 15th March, 2019).
13. Social Outcomes. 'Place based investment', available at: https://socialoutcomes.com.au/toolkit/place-based-investment/ (accessed 7th March, 2019).
14. Lin, W. C., Bharel, M., Zhang, J., O'Connell, E., & Clark, R. E. (2015) 'Frequent emergency department visits and hospitalizations among homeless people with Medicaid: Implications for Medicaid expansion', *American Journal of Public Health*, Vol. 105, No. S5, pp. S716–S722, available at: https://ajph.aphapublications.org/doi/10.2105/AJPH.2015.302693 (accessed 17th July, 2019).
15. Zuckerman, D. (2013) 'Hospitals building healthier communities', The Democracy Collaborative at University of Maryland, pp. 59–66, available at: https://community-wealth.org/sites/clone.community-wealth.org/files/downloads/Zuckerman-HBHC-2013.pdf (accessed 17th July, 2019).
16. Artiga, S., & Hinton, E. (2018) 'Beyond health care: The role of social determinants in promoting health and health equity', Kaiser Family Foundation Issue Brief, available at: http://files.kff.org/attachment/issue-brief-beyond-health-care (accessed 17th July, 2019).
17. Morrison, I. (2017) 'Taking on the social determinants of health', *Hospitals & Health Networks*, available at: https://www.hhnmag.com/articles/8657-social-determinants-of-health-the-promedica-story (accessed 7th March, 2019).
18. Scally, C., Waxman, E., Gourevitch, R., & Adeeyo, S. (2017) 'Emerging strategies for integrating health and housing', The Urban Institute, available at: https://www.urban.org/sites/default/files/publication/91941/emerging_strategies_in_integrating_health_and_housing_final_6.pdf (accessed 17th July, 2019)
19. Robert Wood Johnson Foundation. (n.d.) 'Could where you live influence how long you live?', available at: https://www.rwjf.org/en/library/interactives/whereyouliveaffectshowlongyoulive.html (accessed 7th March, 2019).
20. Sullivan, H. (2019) 'Hospitals obligations to address social determinants of health', *AMA Journal of Ethics*, Vol. 21, No. 3, pp. E248–E258, available at: https://journalofethics.ama-assn.org/article/hospitals-obligations-address-social-determinants-health/2019-03 (accessed 14th March, 2019).