The Importance of Social Determinants of Health Data

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In Winter 2018, eHealth Initiative Foundation and the LexisNexis® Risk Solutions healthcare business hosted the second in a series of roundtable meetings on data governance in healthcare. The roundtable focused on data governance from the perspective of Social Determinants of Health (SDOH), convening senior executives from across the healthcare spectrum. The goal of the meeting was to gather expert opinions on the use of SDOH data to benefit patients and providers. Medical care alone has a very limited effect on overall population health and could be significantly enhanced by pairing with approaches that address SDOH.[1] SDOH data is critical to reducing cost and improving the quality of care provided by hospitals and health systems.

According to Healthy People, a U.S. Department of Health and Human Services (HHS) initiative providing science-based, 10-year national objectives for improving the health of all Americans, **SDOH are conditions in the environments 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.** Examples of social determinants include availability of resources to meet daily needs, such as safe housing and local food markets; access to educational, economic, and job opportunities; access to health care services; quality of education and job training; availability of community-based resources in support of community living; opportunities for recreational and leisure-time activities; transportation options; public safety; social support; social norms and attitudes, such as discrimination and racism; exposure to crime, violence, and social disorder; socioeconomic conditions, including concentrated poverty and the stressful conditions that accompany it; residential segregation; language and literacy; access to mass media and emerging technologies (e.g., cell phones, the Internet, and social media); and culture.[2]

> "Social determinants of health can lead to better care management and personalized care. We believe the industry should remain focused on the shared goal of improving patient outcomes. Socioeconomic data provides a unique lens because it provides insights that enable care givers and care planners to treat patients holistically."
>
> -Josh Schoeller,
> Senior Vice President &
> General Manager,
> LexisNexis Health Care

Categories of Social Determinants of Health

The U.S. generally recognizes the five overarching categories that Healthy People places SDOH into—

Economic Stability, Education, Social & Community Context, Health & Healthcare, Neighborhood & Built Environment. The vast majority of U.S. healthcare dollars and efforts are spent on clinical factors instead of addressing the underlying socioeconomic and behavioral factors that greatly impact patients' health.[3] SDOH data can be used to identify the most vulnerable populations and gives providers and health plans meaningful insights into the health of their patients. SDOH improves patient and population health by contributing to the complete picture of an individual.

The Centers for Disease Control (CDC) has identified addressing SDOH as "the primary approach to achieving health equity" and the goal of

public and private efforts. The CDC also encourages programs to work across sectors to improve housing, education, and transportation, in partnership with community activities.[4,5] While the healthcare industry increasingly recognizes the importance of SDOH in impacting health outcomes and costs, it is less clear how to define, measure, collect, and share the data. In the wake of healthcare reform and further integration of value-based and population health payment models, organizations are searching for innovative policy and process approaches that will help facilitate quality and efficient clinical care.

HEALTH PLAN STRATEGIES FOR SOCIAL DETERMINANTS

Addressing SDOH has become a top priority for public and private institutions. State Medicaid programs and the Children's Health Insurance Program (CHIP) have introduced care models to engage patients in improving their personal well-being and private health plans are also working to address environmental factors that impact a person's health.[6] Insurance providers are uniquely suited to help populations of all sizes lead healthier lives. In addition to traditional health care services, health plans have been addressing SDOH by coordinating housing, employment, education, food services, and supporting other needs such as child care.

Insurers are realizing that by working to mitigate the negative impacts of SDOH, significant benefits can be achieved that improve both access and outcomes for individuals while lowering overall costs. America's Health Insurance Plans (AHIP), the largest membership organization for health providers, reported that many health plans are identifying at-risk populations, designing programs based on member needs, and mapping and cataloguing existing community resources. For instance, a large Medicaid provider realized that formerly incarcerated individuals who were employed cut their healthcare spending in half. Some insurance companies are finding the worse health areas in the United States and are working on ways to assist those communities. SDOH data is still evolving, therefore AHIP made clear that health plans are not using SDOH data to set rates and premiums, influence market participation, or deny services.

> "Health plans are not using social determinants of health data to deny services."
>
> *-Rashi Venkataraman, Executive Director, Prevention & Population Health, America's Health Insurance Plans*

AHIP described two successful initiatives that addressed the stress of food security and loneliness in the elderly, respectively. Stress is one of the most detrimental adverse SDOH and has been associated with increased risk for coronary vascular disease, obesity, diabetes, depression, cognitive impairment, inflammatory and autoimmune disorders, and reduced physical mobility and cognitive function at older ages. People who face more stress in their lives also experience increased risk of adverse birth outcomes, and disparities have been found across childhood asthma, hypertension, substance abuse, diabetes, obesity, and depressive symptoms.[7] These two examples scratch the surface of some of the innovative programs that health plans are beginning to implement.

Geisinger's Fresh Food Farmacy Uses SDOH to Improve Outcomes, Reduce Costs

In the treatment of diabetes, Geisinger's Fresh Food "Farmacy"[8] has had clinical impacts superior to those provided by medications (that cost billions of dollars to develop) at dramatically lower cost. People who are "food insecure" cannot reliably get nutritious food and are more likely to have diabetes, be obese, and in poorer health. While 12.7% of the U.S. population and 18% of children are food insecure, 14% of the overall

populations and 23% of children in the counties Geisinger serves are food insecure. One in eight of these food-insecure people has diabetes.

Geisinger started the Farmacy in 2016 by querying their electronic health record's (EHR) database for adult patients in selected zip codes who had a diagnosis of type 2 diabetes and hemoglobin A1c (HbA1c) levels greater than eight, which indicates that their diabetes was not controlled. Geisinger then screened for food insecurity with a tool linked to their EHR, asking for responses to two questions: (1) "Within the past 12 months I/we worried whether our food would run out before we got money to buy more," and (2) "Within the past 12 months the food I/we bought just didn't last, and we didn't have money to get more." Anyone who agreed with one or both of these statements was considered food insecure.

Patients who meet these criteria and expressed interest in the program were referred to an enrollment class where they meet their care team and received a "prescription" for healthy, diabetes-appropriate food. Geisinger built a food pantry at one of their clinical centers so that patients could pick up food and receive care at one location. The pantry provides patients and their families with the food, menus, and recipes needed to prepare two healthy, fresh meals five days per week. In addition to receiving standard diabetes medical care, patients also participated in 15 hours of group classes on diabetes self-management. They received direct medication-management assistance from a pharmacist, followed-up with a registered dietitian, and also received health coaching and ongoing case management. This care is provided through a medical home model so that participants received reliable, patient-centered, multidisciplinary, and collaborative care.

Before the Farmacy these members costs Geisinger Health Plans an average of $8,000 to $12,000 per person, per month. The payer-side costs have dropped by two-thirds, on average, across the program. A year into the program, more than 80 patients and their families were actively enrolled, feeding approximately 250 people 10 meals each week. With 12 months of healthy food and lifestyle changes, **HbA1c levels dropped more than two points, from an average of 9.6 before the program to 7.5**. For diabetic patients, every one-point drop in HbA1c corresponds to a more than 20% decrease in chance of death and serious complications from the disease, such as blindness and kidney failure. **Geisinger has also seen significant improvements in patients' cholesterol, blood sugars, and triglycerides, improvements that can lower the chances of heart disease and other vascular complications.** Among the program's other benefits is making sure patients are on appropriate medications and getting regular diabetic foot exams to prevent future amputations.

CareMore's Togetherness Program Improves Outcomes for Seniors

In 2017, CareMore Health, a care delivery system and subsidiary of Anthem that serves Medicare and Medicaid patients, introduced its Togetherness Program, a comprehensive initiative aimed at identifying and intervening in the loneliness among its senior patients. CareMore asserts that loneliness is a health condition that can be diagnosed and treated through community-based interventions and close engagement with patients.[9]

The program enrolled 1,000 lonely senior patients in an intensive intervention that includes weekly phone calls, home visits, encouragement, and connection to community-based programs using "Togetherness Connectors," who were social workers and volunteer associate phone pals. Togetherness saw the following positive health outcomes by the end of 2018:

- **Participation in exercise programs increased by 56.6% for the program's participants compared to those not involved in the program.**
- **Emergency room (ER) utilization among enrolled participants decreased by 3.3% compared to the program participants' baseline, while ER use of the intent to treat population increased by 20.3%.**
- **Hospital admissions per thousand members among program participants are 20.8% lower than admissions among the intent to treat population.[10]**

Without SDOH data and partnerships, these initiatives would not have been successful. The Fresh Food Farmacy partnered with the Central Pennsylvania Food Bank, CareMore has a partnership with the local senior center, and both organizations partnered with community members and organizations. By using EHR data and modifying their EHRs to accommodate questions related to SDOH, both organizations were able to identify and work with their targeted population. Although there is a long way to go with the full implementation of SDOH data into healthcare, the trend will increase. In January 2019, following CVS Health's $69 billion acquisition of Aetna, CVS pledged $100 million over the next five years toward improving community health. The Aetna Foundation already supports a number of community health programs and employees have pledged $10 million hours' worth of community service annually.[11]
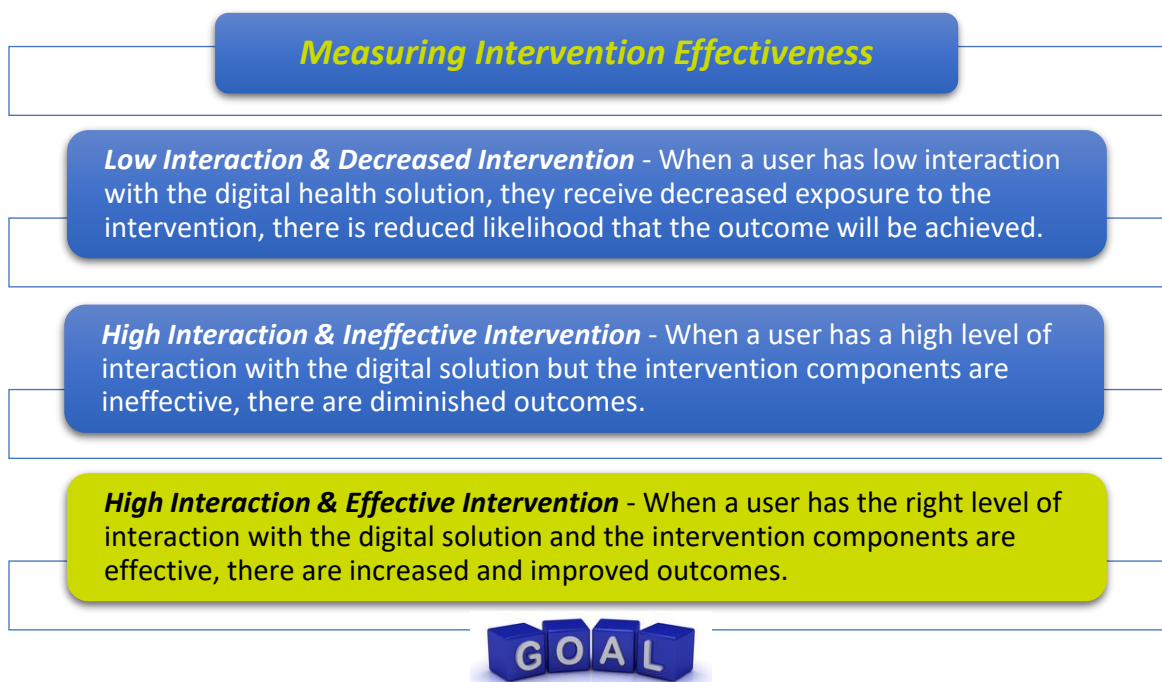
Johnson & Johnson (J&J) Health and Wellness Solutions also provided practical examples of what SDOH interventions could look like. Behavior change interventions start by asking individuals to think critically about their goals. For example, the behavior or health outcome they would like to change, if they are trying to create a new positive behavior or break poor behaviors or habits, and what determines the desired behavior. Traditional behavioral measurements tend to be one-size-fits-all, those who respond to an intervention and those who do not, responders vs. non-responders.

Data Science methods identify patterns of user behavior that become the sub-groups of users, working from the premise that one size does not fit all when it comes to interventions. The intervention components can be personalized for each sub-group using algorithms in the decision engine of a product. Digital Behavior Change Interventions (DBCI), personalized feedback, health coaching, and social support are means of handling SDOH and collecting related data. DBCI products and services are mobile health (mHealth) products such as computer programs, websites, mobile applications, text messaging, wearable devices, body and environmental sensors, and telecommunications. Targets include physical activity, sleep, weight management, diabetes management, healthy diet and stress management.

Identifying individual behavior and then personalizing interventions to apply the most effective technique for each individual is the future of data science. Using engagement as an example, suppose an employee wellness group has prioritized engaging participants to increase weekly amounts of physical activity. One of the measures to capture if the intervention was successful is counting how many steps a participant takes each day. The primary purpose of an intervention is the health outcome of a digital solution. In this case the digital behavior change intervention is consistent daily use of the fitness tracker to record the number of steps taken. It is the measured behavior, as opposed to the outcome of intervention which is overall increase in weekly physical activity. The user interactions with interventions (tracking daily steps) hopefully produce the desired outcome of increased physical activity. Both the interaction and the quality of the intervention components are essential to deliver outcomes. When the digital health solution is personalized for sub-groups and the interventions components are applied over a large user population, the impact is greater. This structure moves away from blanket conclusions that an intervention did not work and allows researchers to tease apart what worked for both responders and non-responders, creating different subgroups that responded to a personalized set of behavior change techniques.

> "Personalizing interventions to provide the right behavior change technique for the right person, at the right time is important.
>
> *- Nicole Brainard, PhD, MPH, Behavioral Scientist, Johnson & Johnson Health and Wellness Solutions*

Measuring Intervention Effectiveness

Low Interaction & Decreased Intervention - When a user has low interaction with the digital health solution, they receive decreased exposure to the intervention, there is reduced likelihood that the outcome will be achieved.

High Interaction & Ineffective Intervention - When a user has a high level of interaction with the digital solution but the intervention components are ineffective, there are diminished outcomes.

High Interaction & Effective Intervention - When a user has the right level of interaction with the digital solution and the intervention components are effective, there are increased and improved outcomes.
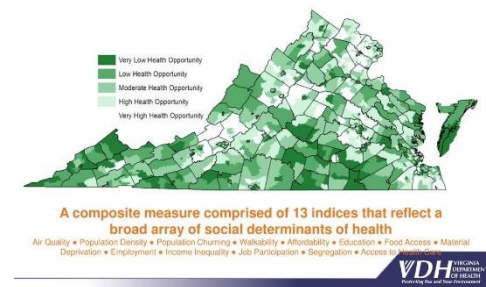
GOAL

J&J has seen success in their implementation of these techniques and can predict with 80% accuracy if someone is going to increase an activity. They created a medication adherence solution where individuals were able to upload their regimen in an application (app) that tracks doses and identifies when the individual will potentially miss a dose. **The primary behavior desired with medication adherence is taking medications *as recommended* by a provider and with a high level of accuracy, J&J can predict if a person will miss medication.**

Virginia's Health Opportunity Index (HOI)

The Virginia Health Opportunity Index (HOI), https://www.vdh.virginia.gov/omhhe/hoi/, is an online mapping tool of community health influences that allows advocates, citizens and providers to view the many factors that affect health across the Commonwealth of Virginia. It provides a composite measure of SDOH that relate to a community's well-being and is a part of the state's continuing efforts to improve the health of all Virginians. The HOI consists of 13 indicators that were chosen following an extensive review of the literature on SDOH. The indicators are organized into four profiles, Community Environmental (indicator of social environment); Consumer Opportunity (measures resources available); Economic Opportunity (highlights employment and income); Wellness Disparity (measures disparate access to health services).[12]

One of the main conclusions of Virginia's HOI data is that *place* is a major component of health outcomes. The correlation between place and health outcome is strong, and the data is robust enough to be able to use predictive analytics to look at what interventions will most successfully affect a given health outcome in a given community. This information can then be implemented by policy makers in the form of targeted and tailored interventions.[13]

Virginia Health Opportunity Index

A composite measure comprised of 13 indices that reflect a broad array of social determinants of health

Air Quality • Population Density • Population Churning • Walkability • Affordability • Education • Food Access • Material Deprivation • Employment • Income Inequality • Job Participation • Segregation • Access to

Care Compass Network Decreases ED Behavioral Health Admissions in NY

New York State's Medicaid Section 1115 Medicaid Redesign Team (MRT) Waiver achieved significant results in meeting its goals of improving access, quality, and cost effectiveness of health services for the poorest and most at-risk residents. The waiver, which has operated since 1997, allows the State to implement a managed care program which provides comprehensive and coordinated healthcare to Medicaid recipients, thereby improving their overall health coverage. This program transformed Medicaid from a fragmented and re-active, provider-focused system that was overly focused on in-patient care towards an integrated, pro-active, patient and community focused system that allows providers to invest in changing their business models. The state works with specific agencies that are tackling SDOH,[14] including Care Compass Network.

Care Compass Network launched the Crisis Stabilization Project to provide resources to emergency departments and community behavioral health providers. They help increase awareness and provide tools to monitor and observe unstable behavioral health patients. Crisis Stabilization services provide a single resource of expert care management where these patients can be monitored in a safe location, supporting the de-escalation of the crisis. A mobile crisis team is available to assist with moving patients safely to an inpatient psychiatric stabilization if short term monitoring does not resolve the crisis. **Care Compass integrated a Licensed Clinical Social Worker (LCSW) with 911, who had a police scanner and went to low intensity 911 calls to assist unstable behavioral health patients. Their data revealed that 70% of the time when the LCSW assisted during a behavioral health patient crisis, they were able to de-escalate situations so that patients in crisis did not need to go to the ED.** The team follow-ups after stabilization to ensure continued wellness. Care Compass has a number of initiatives that address SDOH through the 1115 Waiver.

American Academy of Family Physicians (AAFP) — EveryONE Project Screening Tools
The AAFP launched The EveryONE Project to help family physicians confront health disparities. The project focuses on providing family physicians and their practice teams with education and resources, advocating for health equity, promoting workforce diversity, and collaborating with other disciplines and organizations to advance health equity. The toolkit is designed to help family physicians address SDOH in their practices and communities.

HTTPS://WWW.AAFP.ORG/PATIENT-CARE/SOCIAL-DETERMINANTS-OF-HEALTH/EVERYONE-PROJECT.HTML
HTTPS://WWW.AAFP.ORG/PATIENT-CARE/SOCIAL-DETERMINANTS-OF-HEALTH/EVERYONE-PROJECT/EOP-TOOLS.HTML

Association of Academic Health Centers (AAHC) — Toolkit to Promote Multi-Sectoral Collaboration
Although academic health centers have traditionally focused on medical care, they are broadening their approach to more directly address SDOH. AAHC is engaging member institutions to address individual and population health and their underlying social determinants. Their toolkit includes a report authored by AAHC which examines SDOH challenges and barriers as well as responses and solutions. The toolkit also offers additional comprehensive reports, resources, and articles, on SDOH; best practices about how academic health centers are addressing SDOH; and a self-assessment scorecard tool to help organizations track their efforts. HTTP://WHEREHEALTHBEGINS.ORG/INDEX.PHP

Centers for Medicare and Medicaid Services (CMS) — Accountable Health Communities' (ACH) Health-Related Social Needs Screening Tool (HRSN)
The HRSN Screening Tool addresses a critical gap between clinical care and community services in the current health care delivery system. It is CMS's attempt to see if systematically finding and dealing with the health-related social needs of Medicare and Medicaid beneficiaries has any effect on their total health care costs and makes their health outcomes better. In the next 5 years, hundreds of participating clinical delivery sites across the 32 AHCs will screen over 7 million Medicare and Medicaid beneficiaries using ten core domain questions. The AHCs can also choose to add any supplemental domain questions into their standard screening processes. HTTPS://INNOVATION.CMS.GOV/FILES/WORKSHEETS/AHCM-SCREENINGTOOL.PDF

National Association of Community Health Centers — PREPARE Tool & Toolkit
Protocol for Responding to and Assessing Patients' Risks and Experiences (PREPARE) is a national effort to help health centers and other providers collect the data needed to better understand and act on their patients' SDOH. The PRAPARE assessment tool consists of a set of national core measures as well as a set of optional measures for community priorities. It aligns with national initiatives prioritizing social determinants (e.g., Healthy People 2020), measures proposed under the next stage of Meaningful Use, clinical coding under ICD-10, and health centers' Uniform Data System (UDS). The PRAPARE Implementation and Action Toolkit is available online and contains resources, best practices, and lessons learned to help guide interested users in each step of the implementation process, including strategies, workflow diagrams, EHR templates, sample reports, and examples of interventions to address SDOH.

HTTP://WWW.NACHC.ORG/WP-CONTENT/UPLOADS/2018/05/PRAPARE_ONE_PAGER_SEPT_2016.PDF
HTTP://WWW.NACHC.ORG/RESEARCH-AND-DATA/PRAPARE/TOOLKIT/

National Quality Forum (NQF) — NQP Social Determinants of Health Data Integration
Organizations are developing advanced predictive analytics tools to identify populations and individuals that may suffer from specific deterioration of health conditions. The NQP Data Integration Action Team works to identify real world exemplars and successful approaches to integrating SDOH data that support both providers and communities in their efforts to eliminate disparities. The team also brings together experts and recognized leaders from the private and public sectors who are committed to accelerating the integration of data on SDOH into clinical practice. NQF will convene a multi-stakeholder team that allows member organizations to engage, share, and learn from one another. Through a series of web meetings and an in-person forum, the team will develop and share priorities, goals, and promising practices to inspire action in others. Starting in December 2018, the NQP Action Team will convene over a six to eight-month time period that culminates in a capstone public webinar.

HTTP://WWW.QUALITYFORUM.ORG/PROJECTDESCRIPTION.ASPX?PROJECTID=88247

The Association of State and Territorial Health Officials (ASTHO) Center for Population Health Strategies
States use informatics and analytics tools on SDOH data to make decisions for population health management and disseminate information to partners, lawmakers, and the public. State public health agencies have access to many data sources but may still need to establish data sharing agreements to gain access to additional SDOH data. Although states may face challenges around training, resources (i.e., templates, datasets, open-source platforms), lack of standards, and legal issues such as data sharing and use agreements and HIPAA compliance, they are creating effect initiatives to improve the lives of their communities. ASTHO's Center for Population Health Strategies shares proven and cost-effective population health improvement approaches with state and territorial health officials (S/THOs) and their leadership teams. The Center builds clinical to community connections, including financing population health interventions; addresses health equity and SDOH, and capitalizes on health data analytics and public health informatics.

ORGANIZATIONS DEVELOPING STANDARDS FOR THE COLLECTION AND USE OF SDOH

Although various organizations are beginning to create tools and standards that address SDOH, there are major challenges around the definition of standards for the collection and the use and exchange of SDOH data. In addition to establishing and harmonizing SDOH value sets, terminologies, vocabularies and code sets, industry will need to address the lack of basic consistent definitions on SDOH domains and the metrics related to those domains, and then incorporate standardized SDOH data elements into EHR systems, health plan data systems, public health databases. The following organizations have been working on standards.

The Institute of Medicine's (IOM) Committee on Recommended Social and Behavioral Domains and Measures for Electronic Health Records (EHR) recommended inclusion of 12 SDOH to all EHRs. The committee conducted a two-phase study that concluded the Office of the National Coordinator for Health Information Technology (ONC) and CMS should include in the certification and meaningful use regulations the standard measures for four social and behavioral domains that are already regularly collected as well as an additional eight social and behavioral domains.[15]
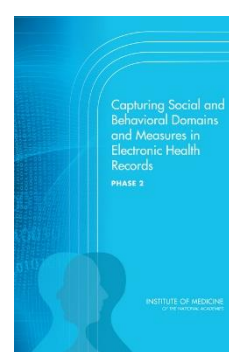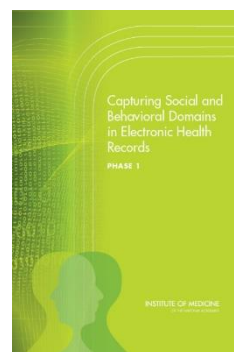
IOM Recommended Measures for EHRs[16]

Measure	# of questions	Frequency	
Alcohol Use**	3 questions	Screening & Follow Up	*Currently collected in clinical settings*
Race & Ethnicity	2 questions	At Entry	
Residential Address	1 question	Verify Every Visit	
Tobacco Use & Exposure	2 questions	Screening & Follow Up	
Census tract-median income	1 question	Update on Address Change	
Depression**	2 questions	At Entry	*Recommended Additions*
Educational Attainment**	2 questions	Screening & Follow Up	
Financial Resource Strain**	1 question	Screening & Follow Up	
Intimate Partner Violence**	4 questions	Screening & Follow Up	
Physical Activity**	2 questions	Screening & Follow Up	
Social Connections & Isolation**	4 questions	Screening & Follow Up	
Stress**	1 question	Screening & Follow Up	

*ONC Interoperability Standards Advisory identified these SDOH data elements

The ONC Interoperability Standards Advisory (ISA) is focused on interoperability for sharing information between entities. It reflects the results of ongoing dialogue, debate, and consensus among industry stakeholders when more than one standard or implementation specification could be used to address a specific interoperability need. ISA identified eight initial sets of SDOH data elements that are in line with the IOM Recommended Measures for EHRs—financial resources, education, stress, depression, physical activity, alcohol use, social connection and isolation, exposure to violence. The ISA is meant to provide the industry with a single, public list of the standards and implementation specifications that can best be used to address specific clinical health information interoperability needs. Discussion takes place through the ISA public comments process.[17]

The National Committee on Vital and Health Statistics (NCVHS) is developed a Measurement Framework for Community Health and Well Being. The NCVHS serves as the statutory public advisory body to the Secretary of Health and Human Services (HHS) for health data, statistics, privacy, and national health information policy and the Health Insurance Portability and Accountability Act (HIPAA). The Committee advises the HHS Secretary, reports regularly to Congress on HIPAA implementation, and serves as a forum for interaction between HHS and interested private sector groups on a range of health data issues.[18] NCVHS has studied the community health improvement movement and identified a need for a more strategic federal role to support communities. The Committee's work will culminate in recommendations to HHS regarding potential approaches for improving availability of and access to sub-county data and for increasing the capacity of communities to use data as a key driver for health improvement efforts. Their framework provides a parsimonious structure for thinking about how to measure community health and well-being across determinants from life course and equity perspectives. The framework includes the domains and subdomains but does not include specific indicators or metrics.[19]

The **Social Interventions Research & Evaluation Network (SIREN)** at the University of California, San Francisco is developing a series of harmonized value sets on SDOH. SIREN's mission is "to catalyze and disseminate high quality research that advances efforts to identify and address social risks in health care

settings."[20] Their Evidence Library contains research articles, issue briefs, reports, and commentaries that either focus on or are relevant to evaluating health care-based interventions that address patients' social and economic needs. SIREN prioritizes resources that carefully describe and evaluate the social needs components of these interventions.[21]

The **CDC's Social Determinants of Health Initiative** provides resources for SDOH data, tools for action, and information on programs and policy. The data is provided for people in public health, community organizations, and health care systems to assess SDOH and improve community well-being. The CDC offers a variety of tools for putting SDOH into actions and provides sources for SDOH data, for instance Chronic Disease Indicators; an Interactive Atlas of Heart Disease and Stroke; the National Center for HIV/AIDS, Viral Hepatitis, STD, and TB Prevention Atlas; information from the National Environmental Public Health Tracking Network; the Social Vulnerability Index; and a Vulnerable Populations Footprint Tool. They have resources for their programs and policies that address SDOH and provide research on economic stability, education, social and community context, health and healthcare, neighborhood and built environment, and general SDOH Topics and Methods.[22]

Health Level Seven® (HL7) International's Bidirectional Services eReferrals (BSeR) involve the exchange of information between clinical care EHRs and service systems or EHRs that reside in services, lifestyle change, and public health organizations and the return of information from the services programs to clinical care. The standards developed through this project will help raise the visibility and accessibility of available service programs in clinical workflow; facilitate clinician and case manager referral initiation in clinical care; support the consent, approvals, and scheduling processes; provide appropriate common and program specific patient data in the referral itself; and support engagement, progress, and achievement updates being sent back from the services program to the clinical referrer. Examples of these programs include diabetes prevention, hypertension management, tobacco cessation, stroke management, arthritis management, obesity prevention, and other prevention and health promotion programs.[23]

CONCLUSIONS

There is growing recognition that SDOH are a central piece of the health and wellness puzzle for the U.S. healthcare system. The importance of SDOH data in contributing to the complete picture of individuals and communities cannot be underestimated. The healthcare industry has begun to recognize that focusing on medical care alone is not an effective way to manage population health. Pairing medical care with SDOH, could significantly improve care, lower cost, and improve quality of life for millions.

While, many healthcare industry executives are aware of the impact of SDOH, there is no clear direction about how to operationalize its use. More research and best practices that incorporate SDOH into standard care need to be identified and broadly shared. As addressing SDOH becomes more of a priority, industry, government, providers, and vendors will need to work collaboratively to advance standards and develop products that make SDOH into a plan of care for individuals and communities.

About LexisNexis Risk Solutions

LexisNexis® Risk Solutions data scientists clinically validate attributes to identify those social influencers of health that when addressed proactively can result in improved care management and patient engagement. The LexisNexis suite of socioeconomic health solutions aim at helping health plans, providers, and pharmacies understand health influencers and barriers more holistically with the goal of improving outcomes through more personalized care management and outreach. LexisNexis data scientists analyze environmental, economic and community attributes to identify which factors, when addressed, will lead to patients receiving better and more effective care.

LexisNexis Risk Solutions harnesses the power of data and advanced analytics to provide insights that help businesses and governmental entities reduce risk and improve decisions to benefit people around the globe. We provide data and technology solutions for a wide range of industries including insurance, financial services, healthcare and government. Headquartered in metro Atlanta, Georgia, we have offices throughout the world and are part of RELX Group (LSE: REL/NYSE: RELX), a global provider of information and analytics for professional and business customers across industries. RELX is a FTSE 100 company and is based in London. For more information about LexisNexis, please call 866-396-7703 or visit www.risk.lexisnexis.com/healthcare, and www.relx.com.

About eHealth Initiative

eHealth Initiative (eHI) & Foundation is a Washington DC-based, independent, non-profit organization whose mission is to drive improvements in the quality, safety, and efficiency of healthcare through information and information technology. eHI is the only national organization that represents all stakeholders in the healthcare industry. Working with its membership, eHI advocates for the use of health IT that is practical, sustainable and addresses stakeholder needs, particularly those of patients, www.ehidc.org.

[1] https://www.nejm.org/doi/full/10.1056/NEJMsa073350#t=article

[2] https://www.healthypeople.gov/2020/topics-objectives/topic/social-determinants-of-health

[3] https://www.nejm.org/doi/full/10.1056/NEJMsa073350#t=article

[4] http://www.cdc.gov/nchhstp/socialdeterminants/faq.html

[5] http://www.cdc.gov/socialdeterminants/cdcprograms/index.htm

[6] https://www.ahip.org/beyond-the-boundaries-of-health-care-addressing-social-issues/

[7] Health Disparities and Stress. American Psychological Association. https://www.apa.org/topics/health-disparities/stress.pdf

[8] https://hbr.org/2017/10/how-geisinger-treats-diabetes-by-giving-away-free-healthy-food#

[9] https://catalyst.nejm.org/growing-imperative-address-senior-loneliness/

[10] https://www.businesswire.com/news/home/20181218005059/en/CareMore-Health-Announces-New-Outcomes-Data-First-of-its-Kind

[11] https://www.fiercehealthcare.com/hospitals-health-systems/cvs-aetna-launches-100m-program-aimed-at-social-determinants-health

[12] http://www.vdh.virginia.gov/health-equity/virginia-health-opportunity-index-hoi/

[13] http://www.astho.org/Health-Equity/Virginia-Webinar-Summary-HOI/

[14] https://www.health.ny.gov/health_care/medicaid/redesign/medicaid_waiver_1115.htm

[15] http://nationalacademies.org/HMD/Activities/PublicHealth/SocialDeterminantsEHR.aspx

[16] http://nationalacademies.org/hmd/~/media/Files/Report%20Files/2014/EHR-phase-2/EHRfindingsrecs.pdf

[17] https://www.healthit.gov/sites/default/files/2017_isa_reference_edition-final.pdf

[18] https://ncvhs.hhs.gov/

[19] https://ncvhs.hhs.gov/wp-content/uploads/2018/03/NCVHS-Measurement-Framework-V4-Jan-12-2017-for-posting-FINAL.pdf

[20] https://sirenetwork.ucsf.edu/

[21] https://sirenetwork.ucsf.edu/tools/evidence-library

[22] https://www.cdc.gov/socialdeterminants/index.htm

[23] http://www.hl7.org/special/Committees/projman/searchableProjectIndex.cfm?action=edit&ProjectNumber=1423