Congressional SDOH Caucus Request for Information

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What specific SDOH challenges have you seen to have the most impact on health?
We know that health care is important to an individual's health. We also know that health care is a relatively weak health determinat.[1] Current research is explicit in its evaluation that an individual's health is driven not only by access to health care, but by social factors, environmental factors, health behaviors, as well as genetics. It is based on this ever-growing body of research that more and more resources are being spent to address social needs, to improve health outcomes and fundamentally change how our health care system functions. With this effort comes a realization that there needs to be better coordination between resources to really make an impact. Currently in the realm of social determinants of health (SDOH) the trend has been for individual sectors, specifically health care organizations, to offer their own solutions to challenges. The challenges SDOH faces can be classified into the five domains of SDOH by Health People 2030[2]:

1. **Economic Stability.** Economic stability is a challenge to addressing SDOH. With the pandemic and people facing record job losses the ability for people to earn steady incomes to allow them to meet their health needs is incredibly important for short-term and long-term health. If individuals are unable to meet their health needs the probability of them having worse health outcomes increases.[3]
2. **Education Access and Quality.** Increased access to quality education has shown to be able to improve an individual's economic stability as well increase individuals' health literacy.[4]
3. **Health Care Access and Quality.** Increased access to quality health care has also shown to decrease the risk of adverse health outcomes for diseases[5], thus providing better continuum of care as individuals are affected by health conditions.
4. **Neighborhood and Built Environment.** The Healthcare Information and Management Systems Society (HIMSS) Health box found that an individual's ZIP code could carry more weight on potential health outcomes than an individual's genetic code.[6] The report showed that the influence of neighborhoods and environments are just as important if not more, than an individual's ability to access a doctor. Being able to create neighborhoods and environments that promote health and safety make a lot of impact on the overall health of individuals.
5. **Social and Community Context.** The famous African proverb that society loves to quote is that "it takes a village to raise a child". The quote though focused on child rearing, also highlights another fact. For society to succeed in allowing the next generation of individuals to join it, society must value social and community support of not only children but also the village itself. After all, children can't be raised by the village if the village doesn't ensure that they have the resources and capability to take care of themselves as well as the child. In the same vein, increases to the amount of

social and community support individuals have, has a positive impact on their health. It takes a village to maintain and improve health.

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What areas have changed most during the COVID-19 pandemic?

The Covid-19 pandemic has fundamentally changed society’s vulnerable populations. Factors such as loss of employment, housing instability, food insecurity, and reduced access to medical and social services have deeply affected many households. Last year the median U.S. household income fell by 2.9% to $67,500[1]. This is the first decline since 2011, where the decline was caused by the effects of the Great Recession. In 2020, for the first time in six years, the economic toll of the pandemic increased the number of people in poverty by 3.3 million people[2], to 37.2 million people. These losses would have been greater if not for the significant social safety net that Congress provided.[3]

With the increase of households seeking services from community based organizations (CBOs) due to the economic downturn, many CBOs continue to face a declining stream of resources and are struggling to survive despite their need being more pronounced than ever. The reasons for this can be traced directly to how CBO funding is structured. Lots of CBO funding comes from government and private grants, which rarely pay for the full costs for a CBO to deliver its services. In addition to this, these grants often limit funding to direct program costs and do not fund overheard costs or true infrastructure needs, contributing to a cycle of nonprofit financial

starvation that has rained status quo for decades.[4] The chronic underfunding has left many CBOs fragile during the pandemic.

This fragility, in addition to the nature of the pandemic has caused significant changes. The changes that have been seen can be grouped into three areas: Delivery of Services to Clients, Workforce Challenges, and Long-Term Financial Viability

1. **Delivery of Services to Clients**. In a report[6] by the National Council of Nonprofits, it was noted that during the pandemic at least 50.2% of nonprofits nationwide were experiencing at least a 10% increase in demand for programs of services. The challenge behind this increased demand is that it came in conjunction with a decrease in revenue and workforce. This has led to limited services in many areas of the country. Many organizations were forced to cut programs and as the pandemic has raged on there has been little ability for some nonprofits to bring those programs back. In addition, COVID safety measures challenged many to deliver services utilizing technology or new physical methods. Unfortunately, some CBOs did not have the financial capacity to restructure service delivery methods leading to the closures of services permanently.
2. **Workforce Challenges**. It is estimated that women make up 75% of the nonprofit workforce[6]. It is also known that working women have borne an outsized economic impact because of Covid[7]. In the early days of the pandemic many nonprofits were forced of layoff staff and reduce hours. Many staff were forced to resign due to disruptions in dependent care. Despite re-openings, much of that staff has not returned to the workforce. During the first year of the pandemic CBOs lost 7.5% of its workforce[9]. Those numbers are on an upward trajectory. July 2021 saw the largest employment gains for the social assistance/nonprofit sector in general since the beginning of the pandemic. Recovery in this sector is still slow due to the current tight labor market. However, unlike other sectors who are experiencing employment shortfalls, most CBOs are unable to raise salary offerings because of the nature of grant funding. This may be contributing to the labor shortage some CBOs are experiencing. In addition, two-in-three volunteers stopped contributing time during the pandemic [9]. Though those numbers are slowly recuperating, the pandemic is still causing CBOs to experience a significant decrease in its volunteer staff.
3. **Long term Financial Viability**. It is estimated that 90% of organizations experienced revenue lose during the first year of the pandemic[10]. Due to the nature of nonprofit funding, most of this revenue loss can be attributed to the inability to fundraise during the pandemic dure to social distancing measures. During the second year of the pandemic, organizations that were able to survive the first year have continued to struggle as charitable giving has remained below 2019 levels. As the pandemic continues to rage on, the social conditions that the pandemic causes continue to create destabilizing conditions for CBOs.

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What types of gaps in care, programs, and services serve as a main barrier in addressing SDOH in the communities you serve? What approaches have your organization, community, Tribal organization, or state taken to address such challenges?

As an organization, when we did an analysis of the main barriers that health systems experience when addressing social determinants of health (SDOH) in their communities and we found a few things. First, the knowledge of available community resources varied widely among staff. Social workers, care managers, or care coordinators for hospital systems where only familiar with the organizations that the hospital had an established partnership with. When it came to organizations outside of that established partnership, knowledge levels varied. From a patient perspective, most patients did not know of the resources available to them or how to find them. There was no one true source of information that was standardized across the board to help health systems make appropriate referrals for patients to organizations that could help them. This is despite the fact that resources like 211 existed in our market.

Next, we found that feasibility of those resources to be an issue. For example, a care coordinator could make a referral for a patient to an organization that assists with housing needs. However, the care coordinator is unaware that the organization recently changed its eligibility criteria, and the patient is no longer eligible to receive assistance from that organization. That resource is no longer a feasible resource for that patient. The care coordinator is not aware of that until after the referral has been made and if the patient comes back and informs the coordinator that the referral is unsuccessful. We found that most of the time, after a referral has been made, many health organizations are not sure as to what the outcome of the referral is because there is no way to track that data. In other cases, a resource may be unfeasible for a patient because the organization has limited hours they are open, and the patient works during those hours. It may be that the organization is not accepting any new referrals or is at a limited capacity and only accepting small number of new cases. The reasons all varied as to why the resource may not be feasible, but we found that there was no standard complete way for care coordinators to know that or for the patient to know that without calling and going through the process. Making the entire experience time consuming and draining for patients and care coordinators.

The third thing we found to be a barrier was access. If the patient lived in a rural area where the nearest service provider for their social need was in an urban area, transportation became an issue to accessing the service. If the patient only spoke Arabic and read in Arabic but the resources available only had translation into Spanish, the patient was unable to utilize the resource because of the low literacy/proficiency in English. Other times resources where multistep process and required multiple items from a patient and some patients found that discouraging or overwhelming and/ or simply didn't have the documentation necessary to complete the process required for further assistance. Stigma played a role in access as well because some patients did not want to be stigmatized for accessing resources. For example, some patients would refuse to access behavioral health resources siting they were not weak and did not need them. Others refused referrals to food pantries, despite having food insecurity because they did not want to be perceived as poor.

The final barrier we found was data. There is no comprehensive data available for SDOH in health systems. If Z codes were used, to document SDOH in electronic health records (EHRs), they were used inconsistently. For health systems that may have some sort of data on SDOH for their patients, its very limited and doesn't answer the fundamental question of if an addressed social need improves care. We found that data was not collected on referrals. What needs were being addressed? What needs were not being addressed? Why referral outcomes where what they were? Where were patients accessing resources? If patients benefited from resources? If health systems benefited from the referrals. Comprehensive data on SDOH interventions doesn't exists. Without this data no one can risk stratify for needs. No one can implement informed interventions to systematically address SDOH and not just address social needs.

With these barriers identified, we set out to find a tool that would address knowledge, feasibility, access and collect data at the same time. We settled on partnering with Unite Us to launch their software and develop a seven-state network in 2020. The states we targeted are Nebraska, Iowa, Kansas, Missouri, Minnesota, North Dakota, and South Dakota. The Unite Us software is a tool that provides an end-to-end solution for social care. Their software addresses many of the systematic barriers, that we as CyncHealth identified in our analysis. Primarily, it offers solutions for knowledge gaps, feasibility and provides tools to address some of the access needs. The software also allows for the centralized data collection of social needs. We also partnered with PRAPARE to incorporate their screening tool into the Unite Us platform to increase screening for SDOH and gather more information on the social needs affecting our patient population. Through this partnership with Unite Us and PRAPARE, we as CyncHealth hope to leverage that data and compare it to the health data that we already collect as a Health Information Exchange. We hope using the tool will help us complete our vision of building out a comprehensive, longitudinal health record that incorporates social needs data. With this, we envision being able to match patient health data with patient social needs data and develop comprehensive reports that can help shape resource distribution and policy to truly deal with the upstream issues of SDOH and not just the downstream issues. We believe that as we build this approach, we will be building a comprehensive data solution that can assists health systems, CBOs, and government entities to embark on a united partnership that can address SDOH in the communities CyncHealth serves.

Are there other federal policies that present challenges to addressing SDOH?
HIPAA is one of the federal policies that presents a challenge to addressing SDOH. Entities that are covered by HIPAA are unable or reluctant to share any SODH data that they collect with other entities. This is despite the fact that not all SODH data collected would fall under HIPAA laws. The caution and reluctance that HIPAA covered entities display comes from the ambiguity of how entities can manage an individual's consent under the policy as well as managing what individuals expect when they provide consent[1]. Entities often forget that HIPAA has a focus on portability and not privacy. Parameters around how an entity can use and manage an individual's consent need to be defined. Any parameters that are set need to consider an individual's concern as to how exactly their information is shared. If individuals do not want their providers to share SDOH data automatically with other health care providers, this concern can be addressed by having better defined parameters. For example, consent sheets should explicitly explain what it means if data is automatically shared with other providers. In addition, there needs to be an onus on the health entities to enact policies that encourage transparency and responsibility of informing individuals how their personal information will be shared with entities that are not covered by HIPAA.

A lack of policy around reimbursement for SDOH presents another challenge. Providers have been able to code SDOH into EHRs since 2015 using Z-codes in the ICD-10. Z-codes give the opportunity for providers to systematically document SDOH needs across entire patient

populations. Despite the availability to capture this information, Z-codes are not widely used by providers and have struggled to gain adoption. A major reason for this is that current reimbursement systems are not designed in a way to encourage health systems to make a real effort to utilize these codes and collect information outside of traditional medical diagnosis codes. A change to a value-based reimbursement model may contribute to the increased use of Z codes and better data collection around SDOH[2].

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Is there a unique role technology can play to alleviate specific challenges (e.g. referrals to community resources, telehealth consultations with community resource partners, etc,)? What are the barriers to using technology in this way?

Technology is a foundational tool to addressing SDOH. More and more organizations are utilizing technology solutions to analyze SDOH vulnerability, to link social programs and better monitor patient care. CyncHealth utilizes the Unite Us technology as part of our solution to addressing SDOH challenges. Technology is unique because it makes it possible to collect and synthesize data from multiple sources. When that data is comprehensive, accessible, and verifiable, it enables entities to act upon social factors impacting patient health.[1] An example of this, is the use of Artificial Intelligence (AI) by Lucina Analytics. In their study, they utilized AI to identify mothers who where at risk for pre-term births by analyzing SODH data as well as medical data. Once identified they matched mothers to an appropriate care plan and were able to reduce preterm births by 13% in their highest risk group. Technology also allows for better communication to happen between health entities and CBOs through platforms like Unite US and Aunt Bertha. Being able to normalize that type of cross industry communication is important. Other organizations like GetWellNetwork provide health education direct to consumer to help consumers better self-manage their conditions. Ultimately, the role of technology is about leveraging consumer data to change traditional care models into models that are holistic health strategies.

With that in mind, the biggest barriers of utilizing technology this way, is that technology gets moved away from being a tool to being touted as the solution. Technology can never be the solution. We have learnt this fact from other industries, most noticeably in law enforcement and the use of facial recognition. Facial recognition is only truly effective when a whole host of

factors are meant. When those factors are not meant, the technology becomes a source of misinformation and can cause harm through misidentification.[2] The issues with facial recognition technology in law enforcement highlight a barrier that technology use in SDOH should use as a guiding principle. Data is a tool and is heavily dependent on quality. Data quality is only as good as what is collected. To ensure that that data and technology are valuable there needs to be scrutiny into data process. There needs to the inclusion of people with expertise and who have been doing the work with SDOH as decisions are made about how to best utilize technology. Most importantly there needs to be data transparency to encourage data scrutiny to ensure unintended harm is minimized.

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Where do you see opportunities for better coordination and alignment between community organizations, public health entities, and health organizations? What role can Congress play in facilitating such coordination so that effective social determinant interventions can be developed?

Integrating the services that CBOs, public health entities, and health organizations offer for social services requires a lot of assessment and planning. Each of these entities have complex systems and the social services system is incredibly complicated and requires knowledgeable individuals to navigate. These entities also have differing priorities. Health organizations tend to focus on individuals in their systems that are high-cost, high-needs, and/or have chronic conditions. Community organizations and public health organizations have a border focus point and tend to focus on individuals who are in crisis. The problem with both focal points is that it does nothing to address the pipeline for these populations.[1] Thus, outcomes for the focus populations will improve but the number of people who come into crisis or end up being high-need, high-cost doesn't change and can end up increasing. Because of the population overlap between the populations these entities serve, partnerships have formed. Community organizations are increasing being contracted to assist health organizations to provide services like meal delivery, transportation, service coordination and care transitions in effort to ensure that the individuals they assist thrive in the community and do so in a cost-effective manner.[2] This type of collaboration has shown to be effective on a micro-level. Programs like VAAACares, which focuses on reducing hospital readmissions in eastern Virginia have been successful. The program is a coalition providing care coordination, care transitions and other social needs, that has managed to decrease the 30-day readmission rate in their area from 18.2% to 8.9 percent.[4] This type of coalition building has been effective due to the ability to build a hub of organizations that work together and are the

single point of accountability for health organizations in the area.[5] Most importantly, these hubs have utilized community driven approaches that have enabled them to successfully mobilize resources. The success has led to CMS creating its Accountable Health Communities Model that currently has 28 test sites across the nation.

Opportunity lies in increasing these coalition models from a micro level into a macro level. Doing so allows for the expansion of organizations to have a larger geographic area and allows for better coordination. To make this possible congress will need to heavily invest in community organizations so that they have the resources like health organizations, to offer services to a larger geographic area. Investment should focus on providing grants that support CBOs services as well as community driven approaches that address the entire community and not just a focal point. This type of investment would allow for health organizations and public health entities to truly partner with community organizations and not force them try and rebuild these services when community organizations are not able to offer them.

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What potential do you see in pooling funding from different sources to achieve aligned goals in addressing SDOH? How could Congress and federal agencies provide state and communities with more guidance regarding how they can blend or braid funds?

Pooling funding can address the wrong pockets problem. This problem arises when one organization or sector is best placed to invest in achieving an outcome, but another sector or organization would benefit financially from the investment.[1] This problem makes it incredibly hard to have schools, housing authorities, or transportation systems spend money on items that would increase the overall health of their community, decrease health care costs, improve health quality, but would not enhance their own sector's goal. The ability to pool funding

would allow for more systematic solutions that would address many of the upstream factors for SDOH.[2]

The main challenge to pooling funding first starts with current legislative and regulatory policies that determine how governmental agencies, and community organizations can get funding and how they can use their funds. These polices often restrict the ability for many organizations to pool their funding. Another issue is that the way budgets are formed on the federal and state level is compartmentalized and does not encourage collaboration across federal agencies. The lack of administrative infrastructure for the administration of pooled funds across multiple stakeholders is also an issue.

Congress and federal agencies can help address some of the challenges in pooling funding in a few ways. Firstly, eligibility requirements for funding can be changed to encourage CBOs and consortiums to apply for funding. For example, HHS could allow spending on SDOH to be classified under medical spending under the medical loss ratio definition and categorizing multisectoral organization as eligible entities.[3] Congress can also have federal agencies work together to address SDOH by pooling funding and offer program flexibilities. USDA, HUD and HHS can pool funding together and support cross-sector partnerships that are community driven in their approach. In addition, Congress can encourage greater integration of SDOH funded programs with foundation funds and private organizations by expanding the predicable value proposition of SDOH investment for the non-governmental organizations. This would allow for funding to not only be available at the federal level, but could flow down to multiple levels-city, county, state, etc. This would allow for expanded community investment by multiple entities. Congress should also establish guidelines that support pooled funding and ensure diversity, equity, and inclusion practices are enacted to ensure equitable solutions. The effectiveness of pooled funding largely depends on how effective that funding is managed and administered. To ensure that accountability is present for organizations that access pooled funding, there needs to be the development of guidelines that ensure financial accountability, correct administration of benefits, evaluation and assessment of program goals, and reporting guidance. Coaching and technical assistance should be provided to entities awarded pooled funding to ensure guidelines are met.

The ability for Congress and federal agencies to optimize current programs to facilitate the use of public fund and private funds for broader impact in addressing SDOH is paramount for pooling to be successful.

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How could federal programs such as Medicaid, CHIP, SNAP, WIC, etc. better align to effectively address SDOH in a holistic way? Are there particular programmatic changes you recommend?

The Covid-19 pandemic has shown the importance of federal programs operating in a holistic way to address SDOH. The pandemic has resulted in Congress enacting a lot of flexibilities into federal programs, granting temporary waivers to programs, and adding new program rules to better address needs more holistically. Prior to the pandemic, many of these programs were rigid and operated in silos. These programs were designed and implemented in a myopic manner and have been managed in relative independence to one another. This is despite the fact that research has shown that beneficiaries of these programs would benefit more from better coordinated and integrated services.[1] Some of the changes that Congress has enacted during the pandemic that has allowed for better alignments include:

- Allowing housing programs to reverify income through technology instead of in person (HUD HCV Waivers)
- changing health benefits to accommodate different treatment models, like telehealth services (CMS Waivers)
- allowing nutrition programs to have expanded sites in which meals are served (USDA FNS Waivers)

As we continue to be in the mist of the Covid pandemic, there is opportunity for federal agencies to learn from the pandemic to make improvements to these programs. Federal agencies should study how states implemented flexibilities and waivers to these programs. In instances where the benefit of the flexibility or waiver clearly showed advantage over prior rules, there should be true consideration to make those changes permanent. There also needs to be greater program integration. Focus should switch from siloed approaches to cross-sector approaches. Agencies should consider implementing interventions that effect a grouping of federal programs instead of a single program. An example could be having a universal application for most federal programs where appropriate or incorporating screening and clinical workflows into assessment of outcome measures.

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Are there any non-traditional partners that are critical to addressing SDOH that should be better aligned with the health sector to address SDOH across the continuum from birth through adulthood?

Non-traditional partners in the sectors of education, transportation, housing development, and agriculture are critical to addressing SDOH. Partnership from these sectors are important because they help address some of the systematic challenges that face SDOH. In education,

employers need to be brought into the fold to address SDOH. Workforce development for the infrastructure necessarily to address SDOH cannot focus only on academic institutions. Employers need to ensure that education and job upskilling match actual industry needs. In transportation, entities that support transportation infrastructure need to be brought into the fold to better design transportation routes in a manner that ensures health improvement. This includes trucking companies that may neglect rural areas as well as railroads to better connect cities for resource delivery. Partnerships with housing developers should also be considered. Housing developers are key to ensuring housing options are affordable and built in the manner that decreases environmental risk (natural disasters, chemical exposures, water quality, etc.). In addition, developers are key to be engaged in rural areas to help encourage the rebuilding of homes that are appropriate for individuals to live in. Farmers and food manufactures need to become partners. The ability for consumers to have a quality diet at more affordable prices will need engagement from food manufactures and farmers. There is a need to have incentives for these entities produce higher quality foods that are better for human consumption and reduce the production of highly processed foods. Lastly, Health Information Exchanges can also become nontraditional partners. They can become neutral convenors who home all health data that is accessible to all sectors and truly become a health data utility through public/private partnerships.

What opportunities exist to better collect, understand, leverage, and report SDOH data to link individuals to services to address their health and social needs and to empower communities to improve outcomes?

The ability to standardize social determinants of health (SDOH) data collection and storage is one of the biggest opportunities. For health care providers that utilize EHRs, the need to have coded data elements and associated value sets to represent SDOH in a standard manner is essential. The Gravity project aims to do that and ensure the establishment of an HL7 FHIR Implementation Guide to help all health systems have standardly coded their findings. This will allow for the data collected to be comparable. Implementation of these codes will be challenging because health care systems do not have an incentive to utilize these codes. Instituting a value-base payment method to ensure that health care systems are incentivized to utilize the codes once they are established is a good way to ensure compliance with standardization and control costs.[1]

Health care entities are not the only entities that collect SDOH data. CBOs, public health, and social service entities collect it as well. There needs to be some sort of standardization for data collection between these organizations. To do this, there needs to be an effort made to ensure that communication and coordination is improved between health care entities and CBOs so that they can have the same infrastructure for collecting and storing SDOH data. Currently we have health care entities and other CBOs all collecting some form of SDOH data. However, the ability for that information to be shared bidirectionally does not exist. Most

information sharing goes one way; upstream. It needs to be possible that if a health care entity captures that a patient has a social need such as housing instability, that information is shared with the appropriate CBOs, the patients' health plan, and other public programs. If that need is captured at the CBO, it should be able to be shared the the health care entity. The ability to ensure that SDOH data is captured in a consistent structured way that uses the same terminology is important because it ensures that once that information is shared with other entities it is meaningful.

Once the data collection is standardized, storage of this data to better link it to traditional health data can be done at Health Information Exchanges (HIEs). HIEs are in a unique position to do this linkage because they can act as a neutral convenor and act as a health data utility. HIEs already have longitudinal health records for patients. The addition of SDOH data, will give them the ability to match that data with the existing health data to create a comprehensive longitudinal health record. The storage of this data in a centralized, neutral organization allows for reporting and analysis of the data to be driven by local community needs that help improve outcomes.

What are the key challenges related to the exchange of SDOH data between health care and public health organizations and social service organizations? How do these challenges vary across social needs (i.e., housing, food, etc.)? What tools, resources, or policies might assist in addressing such challenges?

The exchange of social determinants of health (SDOH) data between health care, public health and social service organizations needs to be interoperable. This means that the data that is exchanged is bidirectional, easy to access and use, and standardized so that that it is meaningful to all the organizations. True interoperability is achieved if it is simple to identify an individual's social needs information, the programs for which they qualify, when they received an SDOH intervention, and what the outcome of that intervention was. The benefit of interoperability in this case is that SDOH risk can be incorporated into the care plan at the point of service, and interventions can be coordinated seamlessly.[1] For this type of seamlessness to happen there needs to be the technical infrastructure in place to make sure data can move in this manner. Anytime data is being shared between entities, privacy considerations need to be in place to ensure that meaningful use is followed, and data security is maintained at the highest levels. Functionally limiting data access to the level where only relevant information is provided to the users based on patient care and the user-role is an important piece of cybersecurity for this data.[2] The more secure the data, the better the bye-in from providers, public health entities, social service organizations, as well as patients and consumers.

Challenges to this vision of interoperability include:

1. **Unique patient identification**. It is currently very difficult to verify that a patient's identity across systems is the exact same person. There is no standard approach to uniquely identify individuals across health care, public health, or social services. All these entities

are focused on their own record collection and do design infrastructures with that focus in mind creating incompatibility for identity verification. Having a universal patient id number would solve this issue.

2. **Protected technical infrastructure.** Vendor-developed digital platforms are currently the method at which SDOH data is provided to health care entities and social services. The challenge behind these platforms is that often the data that is collected in the platform is proprietary to the single vendor. This means that if there are multiple platforms in use, organizations must be connected to each of the platforms Organizations that don't have the technical capacity to be connected to multiple platforms are not utilized and pushed out. On the other side, vendors are not able to enter markets where their proprietary platform won't work. Standardization of data delivery methods across the industry would solve this issue.
3. **Technical Architecture.** Core to addressing social need is connecting with public sector human services programs, like housing or childcare assistance, to assess individual eligibility and enrollment in existing human service programs.[3] Seamlessly connecting people to these resources requires access to human services administrative data, but eligibility and enrollment information is not stored or shared outside of government agencies, and there is not existing modern technical infrastructure to support it.[4]

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What are some programs/emergency flexibilities your organization leveraged to better address SDOH during the pandemic (i.e., emergency funding, emergency waivers, etc.) Of the changes made, which would you like to see continued post-COVID?

During the pandemic there are five main things that CyncHealth contributed to Nebraska's Covid response:

1. Provided data for policymakers to be able to make directed health measures. Provided mostly-real- time data, including bed management, resource utilization, labs and cases, COVID-19 patients, capacity forecasting, etc.
2. Utilized the VICO model to launch Machine learning efforts to develop three major types of COVID-19 Risk models in collaboration with NCI
    a. Vulnerability models: for an individual in the general population given some variables, what is the probability thee the individual will contract COVID-19?

   b. Diagnostic models: for an individual who came for a COVID-19 test, what is the probability the individuals will test positive?
   c. Prognostic models: for an individual who tested positive for Covid 19 what probability that the individual will develop an adverse outcome (e.g. ICU admission, mortality)
3. Assisted in care management by creating data feeds with COVID-19 positive labs and high-risk individuals (dialysis, home ventilator, sarcoidosis, chronic respiratory diseases) for payer/provider care management/coordination
4. Created a Covid-19 vaccine tracking dashboard with mostly real-time data, including Vaccine inventory balance, administration, race and demographics distribution, orders tracking, and provider reporting lag.
5. Launched the Consortium for State and Regional Interoperability (CSRI) that brought together CyncHealth, Maryland, Arizona, Colorado, Indiana, and Manifest MedEx (CA) in collaborative for immunization and laboratory data.

As the pandemic continues it is hard to say exactly what will remain useful as factors change. However, the expansion of CSRI would be what CyncHealth would like to see post pandemic. The expansion would allow for public health infrastructure to be in place for immunization and laboratory data that could be used for other diseases ensure better access to data in a bidirectional manner.

Which innovative state, local, and/or private sector programs or practices addressing SDOH should Congress look into further that could potentially be leveraged more widely across other settings? Are there particular models or pilots that seek to address SDOH that could be successful in other areas, particularly rural, tribal or underserved communities?

The practice of addressing social determinants of health (SDOH) through a multi-sectoral alliance could potentially be leveraged more widely across other settings. For a long time, individual sectors have been launching their own resources and solutions to address SDOH. This has created a siloed, fragment response to SDOH and has not really been able to address the border nature of SDOH. Multi-sector alliances, however, have been able to address SDOH needs in communities with a wider net of impact.[1] The success of multi-sector alliances can be attributed to the ability for different stakeholders brining their resources together and building solutions that are community driven. The alliances have clear visions and have established critical pathways for collaborative action that allows for the creation of long-term plans that address many issues specific to their communities. Successful alliances also have strong management and partnership commitment to addressing SDOH. This practice can be leveraged in rural, tribal or underserved communities because of the fact that alliances are grassroot. The incorporation of community resources and stakeholders most familiar with the issues, allows for better coordination of resources, leading to success. This is incredibly important in rural, tribal, and underserved communities, because past solutions have failed to address SDOH due to

having no or little community input in the proposed solutions. As a result, solutions have often faced a multitude of barriers that were not accounted for, leading to the solution becoming inappropriate for these communities. The community engagement piece of a multi-sector alliance is really what sets the practice apart from other SDOH practices. The National Alliance to impact the Social Determinants of Health (NASDOH) has created a multi-sectoral alliance resource compendium that is a great guide for the development of these alliances[2].

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Given the evidence base about the importance of the early years in influencing lifelong health trajectories, what are the most promising opportunities for addressing SDOH and promoting equity for children and families. What could Congress do to accelerate progress in addressing SDOH for the pediatric population?

The most promising opportunity for addressing SDOH and promoting equity for children and families is the expansion of Medicaid. A recent study has found that due to COVID-19, Medicaid enrollment increased by almost 10 million or 15 percent from February 2020 through January 2021.[1] Prior to the passage of the Affordable Care Act (ACA) in 2010, more than 46 million individuals were uninsured and did not have the means nor ability to utilize health services.[2] In just nine years, 18 million people gained access to health insurance, dropping the uninsured population.[3] States that expanded Medicaid had a much lower uninsured rate (8.3 percent) than non-expansion states (15.5 percent)[4]. As of June 2021, over 80 million individuals have health coverage through Medicaid and the CHIP.[5] Besides reducing the number of individuals who are uninsured, Medicaid expansion has other significant benefits that include, improving access to quality health care services, reducing mortality among adults and infants, and reducing mortality among individuals with end-stage renal disease.[6] Medicaid expansion is associated with a reduction in surgical hospitalizations among uninsured members. Patients admitted for surgery largely first presented to the emergency department and in 99% of cases they would likely have resulted in catastrophic visit costs. In states with expanded Medicaid, the rate of uninsured discharges for these surgeries was lower at 7.85 per 100,000. Medicaid expansion was linked to a 6.2% reduction in the share of such hospitalization.[7] Researchers noted these studies promote the discussion of expanding Medicaid amongst states. In 2019, non-expansion states could have prevented more than 50,000 cases of catastrophic financial burden had they expanded Medicaid.[8] In a Health Affairs study that used state-level data across 44 states and patient-level data from four states, it was found that a reduction in surgical hospitalizations among the uninsured can be attributed to Medicaid expansion.[9] Economically, Medicaid expansion was associated with a 4.4 percent to 4.7 percent reduction in total state spending

from 2014-2017 on traditional Medicaid.10 The expansion, reduced the number of unpaid bills and the amount of debt sent to third-party collection among the most vulnerable individuals. It is estimated that Medicaid expansion reduced collection balances by about $1,140 for individuals gaining coverage.[11] Hospitals in Medicaid expansion states saved nearly $6.2 billion in uncompensated care costs and were six times less likely to close in expansion states.[12] A separate analysis found that hospitals in expansion states had a 2.5 percent increase in mean annual Medicaid revenue as a percentage of total revenue from FY 2013 to FY 2017.[13]

Another opportunity is the supporting the increase use and training of community health workers.[14] Community health workers (CHWs) are trained public health or lay workers who serve as a connector among the communities they serve, local healthcare systems, social service providers, and health departments. High poverty, publicly insured patients who received a CHW intervention had improvements in managing diabetes, reducing body mass index, and decreasing cigarettes smoked per day.[15] Patients who received CHW services also showed improvements in mental health and self-reported receipt of high-quality, comprehensive primary care than their usual care counterparts[16]. CHWs utilizing individualized action plans for recovery increased the likelihood of patients obtaining primary care, increased mental health improvements, and reduced the likelihood of multiple 30-day readmissions among a subgroup of participants by nearly 25 percentage points (40 percent to 15.2 percent).[17] CHWs have been found to be more effective than traditional chronic disease management and care strategies for vulnerable populations, cancer prevention, cardiovascular risk reduction, managing diabetes, and addressing mental health issues.[18] At the national level, an evaluation of Center for Medicare and Medicaid Innovation's Health Care Innovation Award grantees found that of the over 100 models utilized in the program, only those using CHWs lowered costs (by $138 per-beneficiary per-quarter.) Kentucky's Homeplace program found a return on investment of $11.34 for every $1 spent on training CHWs.[19] At the local level, an analysis of Denver's Health Community Voices Program, found that the return on investment of the CHW intervention was $2.28 for every $1 spent, resulting in total annual program savings of $95,941.[20] In Nevada, three CHWs working with 37 patients each for 30 to 60 days resulted in approximately $300 savings in average medical costs per patient.[21] In New Mexico, CHWs provided services to 448 high-utilizers in Medicaid Managed Care plans over six months and reduced utilization costs by over $2 million compared with pre-intervention.[23]

To accelerate progress in addressing SDOH for the pediatric population Congress should consider the following key policies:[24]

1. Increasing Access to High-Quality Early Childhood Education Programs
    a. Promotes health development
    b. Improves cognitive outcomes and academic knowledge
    c. Improves academic success
    d. Improves Health
    e. Reduces drivers of education spending
    f. Improves financial well-being

2. Integrating Social Emotional Learning Programs in Schools
    a. Prepares students for school and beyond
    b. Improves academic performance
    c. Reduces teacher burnout
    d. Yields robust return on investment
3. Promoting Access to National School Lunch and School Breakfast Programs
    a. Improves academic achievement
    b. Promotes healthy eating and food security
    c. Reduces obesity-related costs
4. Supporting School-Based Health Centers
    a. Improves access to health services
    b. Improves access to mental health services:
    c. Improves access to reproductive health services
    d. Supports academic success
    e. Yields robust return on investment

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Alternative payment models help to measure health care based on its outcomes, rather than its services. What opportunities exist to expand SDOH interventions in outcome-based alternative payment models and bundled payment population?

Value-based payment (VBP) models have been shown to provide the financial flexibility that allows health care systems to better address SDOH at the population level. The models have also allowed for better accountability for health outcomes and costs for patients. Research has shown that the models can improve SDOH through multiple mechanisms: their financial flexibility may allow health care organizations to fund coordinators or other coordination mechanisms with social service providers; health care organizations could pay for SDoH services out of shared savings, bundled payments, or global payments; or VBP models may pay directly for SDoH services or benefits depending on the payer's policies.[1] The financing mechanism is incredibly important because it allows for reimbursement to flow to CBOs who have been chronically underfunded and asked to do a lot of the work for addressing SDOH. There is relatively strong evidence that when health care and CBOs work together on housing or nutrition interventions (and moderate evidence for non-emergency medical transportation), they can reduce costs and generate return on investment.[2] However, for other types of social needs interventions, there is limited (though often positive) evidence on cost impacts. Overall, evidence is often in specific subpopulations and from time-limited interventions — and more evidence is needed for SDoH interventions in VBP models.[3]

When looking at opportunities to expand SDOH interventions in VPD models there are five main opportunities:

1. Achieving meaningful and system-wide impact will require a VBP strategy rooted in a coherent set of core models that enable the delivery of advanced primary care and are reinforced by specialized care models.[4]
2. Models across providers should use consistent technical standards for key components (e.g., performance measure specifications, risk adjustment methods) to avoid excess provider burden.[5] It is important that when risk adjustment is used that the measure that are stratified by available sociodemographic information so that organizations are able to identify areas of disparities while still addressing operational challenges. The utilization of United States Core Data for Interoperability (USCDI) set more widely would address this issue

3. Multiplayer models, with participation from Medicare, Medicaid, states, employers, and commercial health plans, can enable greater system-wide impact.[6] However, building these multiplayer models will require that organizations are intentional in their partnership building. There will need to be an establishment of communication as well as the acknowledgment of power imbalances. Additionally, there will need to be commitment made to goals that do not favor one entity over another. Infrastructure will need to be built collectively and with consideration of CBO financial constraints. Muliti-sector alliances partnerships provide the framework for with models can be intentional in partnership building.
4. Achieving savings in voluntary models is more challenge than in mandatory models.[7]
5. VBP models are rarely implemented in isolation or without adjustments which complicates evaluation.[8] As more health care organizations implement models, additional support is necessary to ensure that organizational competencies are formed to ensure success. Providing technical assistance and financing upfront can help ensure that health organizations are best prepared to ensure competencies.

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A critical element of transformation, particularly for new models of care, is measurement and evaluation. With SDOH in mind, which are the most critical elements to measure in a model, and what differences should be considered when measuring SDOH outcomes for adult's vs children?

In 2016, researchers at OMH in collaboration with CDC and NCCDPHP researchers released five practices recommended for measurement of SDOH[1]:

- Practice 1: Assess differences in health and its determinants that are associated with social position
- Practice 2: Assess social and structural determinants of health and consider multiple levels of measurement
- Practice 3: Provide reasons for methodological choices and clarify their implications
- Practice 4: Address within-group heterogeneity by comparing groups simultaneously classified by multiple social statuses
- Practice 5: The need to communicate to a wide array of stakeholders can often be taken into consideration in the choice of measures and analytic method

These practices where issued in recognition that most SDOH measurement is focused on single attributes like gender, education, social-economic status, etc. The issue with that single attribute practice is that it does not provide structural and contextual factors that are incredibly important to understanding SDOH outcomes. These practices were also issued as a guiding resource due to the lack of standardized measurement set. National Committee for Quality Assurance (NCQA) in Sept 2021, announced that it hoped to address the lack of a standardize measurement set through the of stratification by race and ethnicity in its health plan quality measure set, the Healthcare Effectiveness Data and Information Set (HEDIS), to hold plans accountable for addressing disparities in care and outcomes among their patient populations.[2] Their stratification will be phased in over a multiyear period beginning in 2021 with five measures across several key areas that cover multiple product lines and represent domains with known disparities: Colorectal Cancer Screening; Controlling High Blood Pressure; Hemoglobin A1c Control for Patients with Diabetes; Prenatal and Postpartum Care; and Child and Adolescent Well Care Visits. NCQA announced that it hopes to build to a more comprehensive measure set over time. The future addition of this data set will provide better guidance to health organizations as to what to specifically measure but also provide better consideration for differences in measures for adults and children. In addition CyncHealth is working on a transportation measure to build out the SDOH measure.

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How can Congress best address the factors related to SDOH that influence overall health outcomes in rural, tribal and/or underserved areas to improve health outcomes in these communities?

The best way for Congress to address factors related to SDOH that influence overall health outcomes in rural, tribal and/or underserved areas is to equitably invest in those communities. Majority of the poor health outcomes in those communities has been because they have not gotten the same level of investment urban, non-neglected areas have gotten. Improving infrastructure available in these areas would go along in improving health outcomes. These communities need to be invested in to create safe equitable environments. This includes environments with good air quality, safe water, access to health providers, broadband internet, workforce development and economic development. In July 2020, The Ways and Means Committee produced Left Out: Barriers to Health Equity for Rural and Underserved Communities[1]. The execution of the proposals made in the report by the house committee would be an equitable investment into these communities.

What are the main barriers to programs addressing SDOH and promoting in the communities you serve? What should Congress consider when developing legislative solutions to address these challenges?

For the communities that CyncHealth serves, CBO funding continues to be a main barrier to addressing SDOH. At this moment in time CBOs need an infusion of funding to ensure that they can keep operating as well as scale up successful programs to truly make a difference community wide. As Congress is developing legislative solutions, there should be true consideration as to changing funding approaches to CBOs to ensure their longevity and ability to offer services. Another barrier is the lack of cross-sector approaches in dealing with cross-sector problems. Getting organizations to understand the importance of a collective approach being in the best interest of communities is barrier. Legislations like the Social Determinants Accelerator Act of 2021 help provide the funding for CBOs and the cross-sector approach necessary for addressing SDOH through community driven approaches. Data quality, standardization and interoperability remains a barrier. There are market forces in the area that favor the repeating of siloed data that EHR data lives in. However, ensuring that our organizations do not make the same mistakes with SDOH data that was made with EHRs

continues to be a challenge. Getting health systems to see the value of longitudinal health records from a clinical workflow perspective remains difficult and requires a significant cultural shift for health organizations. Congress can support HIEs and the health data utility model to show the value that can be provided in the establishment of comprehensive longitudinal health records that incorporate SDOH by providing more funding to the development of the exchanges.

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