

**Below, please provide information regarding the most significant documented or emerging SDOH that contribute to poor mental health or psychological distress across the lifespan in HD populations.**

There are many endocrinopathies that contribute to higher risk of mental health disorders in HD populations. These same diseases often intersect with SDOH to contribute to worse outcomes. For example:

1. Diabetes disproportionately affects HD populations (diagnosis is 77% higher among Black Americans compared to white American populations), and individuals with diabetes are 2-3 times more likely to have depression.
2. Exposure to environmental toxicants such as endocrine-disrupting chemicals (EDCs) is dependent on SDOH such as occupation, food sources, and proximity to contaminated areas, and disproportionate exposures often can contribute to health disparities in populations. EDC exposure, particularly during early development, can have profound and compounding effects on the development of mental health and other neurocognitive conditions.

It is important when considering mental health intervention strategies that each endocrinopathy may need its own unique strategy due to having different underlying causes. For example, depression caused by adverse childhood experiences will require a different intervention approach than depression due to the consequences of living with diabetes. The most effective intervention strategies will be developed and tailored to the situation, taking a holistic account of the many factors that contribute to psychological distress.

**Below, please provide information regarding new intervention strategies addressing SDOH that can promote mental wellness, reduce psychological distress, and prevent the development of mental health problems in HD populations.**

A major problem that patients with endocrinopathies can face is finding an endocrinologist to treat them. The demand for endocrinologists has been growing with the rise of diabetes and other hormonal diseases, while the supply of physicians to treat these conditions has not kept pace. This leads to difficulty in obtaining appointments, as well as months-long wait times between appointments, creating significant stress which may itself contribute to poor mental health outcomes. The first step of identifying a provider can be a difficult problem for patients to navigate, as there is not currently a compiled list of qualified providers that exist in their area. A database of healthcare providers, their locations, and the diseases they are qualified to treat would reduce the barrier to accessing treatment that many people face.

While a database will help individuals find existing providers, the shortage of trained physicians for endocrine diseases will persist, particularly in rural areas. Developing supplemental



training for primary care physicians (PCPs), which more patients have access to, could help alleviate this issue for the most common endocrine disorders such as Type 2 diabetes. Short, regional educational conferences on the basics of diabetes care and prevention for PCPs, nurse practitioners, and physician assistants, for example, could enable them to provide care for those without easy access to an endocrinologist. Proper treatment regimens will likely have downstream effects on improving psychological distress in these populations.

**Below, please provide information regarding promising multi-level interventions or programs that combine strategies to address SDOH at the individual, interpersonal/organizational, community, and/or societal levels of influence to promote mental wellness, reduce psychological distress, and prevent the development of mental health problems in HD populations.**

#### Project ECHO

A promising multi-level intervention is Project ECHO (Extension for Community Healthcare Outcomes), which is a strategy to improve health care in rural communities. Launched originally through the University of New Mexico as a way to share critical and time-sensitive data for the treatment of hepatitis C, Project ECHO is a community focused intervention method utilizing telehealth with an interdisciplinary team of healthcare workers in different geographical locations. Since its original implementation, similar programs have been developed for the treatment of other conditions such as COVID-19 and mental health issues. Studies measuring the effectiveness of Project ECHO have shown that it significantly improves patient outcomes in rural and underserved communities. Project ECHO supports the treatment of patients with a holistic approach, as many individuals are not presenting with a single disease caused by a single source. By virtually connecting different types of providers to undergo case-based learning and treatment, we get closer to intervention approaches that are personalized to the specific needs of the patient. Investments in Project ECHO, or similar projects with a mental health lens, could scale up these benefits and provide personalized evidence-based treatment, particularly in rural populations.

**Below, please provide information regarding promising multi-sectoral interventions in which local service sectors (e.g., health and behavioral health, public health, housing, social services, child welfare, education, justice systems, transportation, parks and recreation, commerce) work together to address SDOH to promote mental wellness, reduce psychological distress, and prevent the development of mental health problems in HD populations.**

#### Healthcare engagement with community centers

An underexplored mechanism of multi-sectoral interventions is the interface between healthcare providers and the broader community they are a part of. Community engagement centers, such as churches and libraries, are opportunities to reach HD populations and those



affected by SDOH. By educating and increasing community engagement between healthcare providers and community centers, patients can have a trusted space within their communities where they can seek out proper treatment. This can also provide a way to tailor healthcare to a person's environment, such as those that are affected by food deserts or areas where drinking water is contaminated.

This kind of engagement and education at community centers can be integrated as a part of medical school curriculums, potentially leading the way for longer-term investments in meeting patients where they are and building public trust in healthcare providers.

**Below, please provide information regarding effective strategies to implement and sustain interventions addressing SDOH that have been effective in promoting mental wellness, reducing psychological distress, and/or preventing the development of mental health problems in HD populations.**

#### Strategies for care transitions

An important point where patient care may be compromised is during critical care transitions, for example when a patient moves from receiving treatment from a pediatrician to an adult-oriented provider. When a patient undergoing such a transition has conditions that may influence with mental health, such as Type 1 diabetes and pituitary diseases, the established a level of trust between patients and their providers is critical. When the time comes to transition to a different care setting, many patients, and particularly those with mental health conditions, may fall off their treatment, which leads to exacerbation of their physical and mental conditions. Intervention strategies to improve transitions of care would help establish continuity of care throughout a patient's journey and lead to better mental health outcomes for more people.

Unfortunately, there is not an extensive body of research on the most effective strategies for patient retention. However, there is some research exploring successful models that study outpatient clinics where patients meet with both their former pediatrician and their new adult-oriented physician. Our members also report more successful transitions when a transition plan is initiated ~1 year prior to the planned transfer date. Identifying developmental and psychosocial challenges that may affect the transition, such as moving to a college campus, should be accounted for. Finally, "patient navigators" that assist with appointment scheduling, education initiatives, and promoting self-management have shown improvements in appointment attendance and patient retention. Scaling up these strategies will be an important next step in ensuring continuous and uninterrupted treatment.

**You may use the box below to enter any additional information not addressed above regarding innovative approaches to prevent mental health problems and promote mental wellness in populations that experience health disparities.**



### Administrative supplements

Federal funding to improve mental health intervention strategies should consider the financial needs of researchers as well as the communities they serve. Administrative supplements for basic and clinical researchers, with a scope that encourages partnerships between researchers and the broader community, would be beneficial in identifying strategies that are most effective. These supplements should encourage researchers to think about new ways they can partner with existing community organizations that would be mutually beneficial. We also encourage such supplements to provide direct funding to both the researcher and the community partner.

### Telehealth research gap

With the rise of telehealth to treat mental health conditions, there is currently a gap in research on comparative effectiveness of virtual sessions compared to in-person visits, which may vary by field. Research to understand these variances would shed light on outcomes for populations that may not be well served by broad adoption of telehealth, such as those without access to reliable Internet. Funding studies on telehealth outcomes should be a major priority, as the results would not only help develop effective long term telehealth-based intervention strategies for patients with mental health conditions, but also help determine which patients are better served by telehealth-based care and which patients would need more in-person visits.