NIMHD Multiple Chronic Disease Disparities Initiative

RFA-MD-21-007, Centers for Multiple Chronic Diseases Associated with Health Disparities: Prevention, Treatment, and Management (P50)

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National Institute on Minority Health and Health Disparities

Background

FY 2019 - Congress provided 1-year funds for Competitive Revisions to existing chronic disease centers supported by NIDDK, NCI, NIAMS, and NIMHD.

FY 2020 - Congress provided 1-year funds for NIDDK, NCI, and NHLBI to address chronic diseases and health disparities in diabetes, kidney disease and obesity.

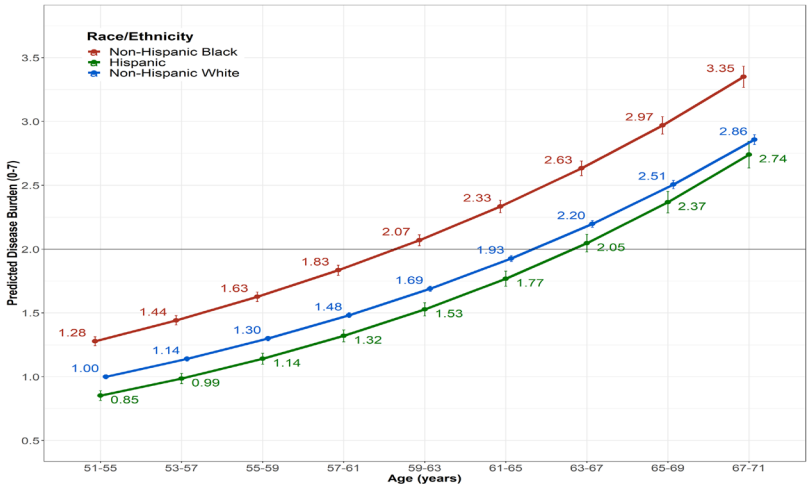
FY 2021 - NIMHD budget included $45M (Public Law 116-260, the *Consolidated Appropriations Act of 2021*) that authorized NIMHD working in concert with NIDDK, NHLBI, NCI, and NCATS to establish and support comprehensive research centers on the prevention, treatment, and management of comorbid chronic diseases associated with health disparities.

Public Law 116-260, the Consolidated Appropriations Act of 2021

Chronic Diseases and Health Disparities.—In fiscal year 2020, NIH launched initiatives to address chronic diseases and health disparities in the areas of diabetes, kidney disease, and obesity. Chronic diseases and conditions are among the most common, costly, and preventable of all health conditions and disproportionately affect minority populations. These diseases can often leave those suffering from them more vulnerable to other diseases. A more comprehensive and holistic effort is needed to ensure that efforts to better address health disparities and co-morbidity encapsulate the full continuum of chronic diseases and their lethality in disparate communities. To this end, the agreement includes sufficient funding for NIMHD, working in concert with NIDDK, NHLBI, NCI, and NCATS, to establish a comprehensive center initiative aimed at a wide variety of chronic diseases and their links to health disparities. As these diseases are often multi-faceted and often regionally linked, NIMHD is encouraged to consider funding mechanisms that would support regional multi-institutional consortiums that produce collaboration, research, and translational science on a wide and broad scale.

Racial/ethnic differences in multimorbidity development and chronic disease accumulation for middle-aged adults

- Data from the Health and Retirement Study (HRS), a biennial, ongoing, publicly-available, longitudinal nationally-representative study of middle-aged and older adults in the United States.
- Assessed the change in chronic disease burden among 8,872 non-Hispanic black, non-Hispanic white, and Hispanic participants who were 51–55 years of age at their first interview any time during the study period (1998–2014).
- Middle-aged non-Hispanic black adults start at a higher level of chronic disease burden and develop multimorbidity at an earlier age, on average, than their non-Hispanic white counterparts.
- Hispanics, on the other hand, accumulate chronic disease at a faster rate relative to non-Hispanic white adults.



Quinones, K. et al., *PLoS ONE*. 2019

Initiative Purpose

The purpose of this initiative is to support regional comprehensive research centers on the prevention, treatment, and management of chronic diseases that disproportionately affect populations that experience health disparities. The disease areas of focus include, but are not limited to, obesity, diabetes, hypertension, coronary heart disease, congestive heart failure, asthma, chronic kidney disease, chronic liver disease, stroke, osteoarthritis, and certain cancers.

These conditions are common and often co-exist in individuals. Each Center must address two or more chronic conditions that commonly co-occur and/or share common social context, etiological pathways, or risk factors and share some similar management strategies.

Multiple Chronic Disease Center Components

Administrative Core. Provide Center oversight and governance and coordinate data harmonization and data sharing across the three Center Research Projects and awarded Pilot Projects and with the Coordinating Center.

Investigator Development Core. *S*upport a pilot project program that provides opportunities for post-doctoral fellows, early career faculty, or other early-stage investigators as defined by NIH, including those from backgrounds underrepresented in the biomedical research workforce to generate preliminary data for subsequent research to address disparities in chronic diseases.

Community Engagement Core. *S*erve as a focal point for organizing and nurturing productive, bi-directional working relationships with consortium partners within the region to identify priorities and community needs in order to develop and disseminate relevant and actionable information and findings to stakeholders.

Research Projects. Each Center will support R01-level research projects that address research questions relevant to the Center's chronic disease disparities focus. Research projects may involve prospective testing of new or adapted interventions or implementation strategies of evidence-based interventions or practices, or evaluations of existing interventions currently implemented by service providers within the region.

Competition and Mechanism of Review

Applications in response to the RFA were reviewed by a Special Emphasis Panel convened by the NIMHD on July 27-28, 2021

Applications Received: 26

Nonresponsive Applications: 0

Noncompetitive Applications: 10

Competitive Applications: 16

1P50MD017344-01,Goran, Michael, Children's Hospital of Los Angeles, Southern California, *Center for Chronic Health Disparities in Latino Children and Families*

- **Caregivers as the Agent of Change for Childhood Obesity and Chronic Disease Risk Among Latino Families**- *The project is testing a parent-only intervention for efficacy of a durable, feasible, culturally relevant program to treat overweight/obesity and reduce chronic disease risk in Hispanic children and their parents. The intervention is designed to compare a telehealth PBT for Hispanic families with a health education control group on changes in child and parent weight and chronic disease risk.*
- **Food Prescriptions to Promote Affordable Diets that Meet RDAs Among Multi-Generational Latino Households**- *The project is developing an affordable and culturally sensitive meal-planning and grocery delivery intervention for Hispanic households. The objective is to determine the impact of food prescriptions and grocery delivery on parental and child obesity, diet quality and chronic disease risk.*
- **Early Life Social, Environmental, and Nutritional Determinants of Disease (ELSEND)**- *The project is combing two existing birth cohorts and new data will be collected on broader SDOH, including geospatial assessments of social and structural factors such as the neighborhood and built environment. The project will: 1) Assess whether early nutrition and/or exposure to environmental toxins is associated with child growth and/or risk for chronic disease at age 5 years and 2) Assess if the food environment and broader SDOH is associated with subclinical markers of disease and if they exacerbate the adverse effects of poor nutrition and/or environmental toxins.*

1P50MD01338-01, Cherrington, Andrea (contact); Baskin, Monica, University of Alabama Birmingham, *Deep South Center to Reduce Disparities in Chronic Diseases*

- **Community-Based Strategies to Reduce Cardiometabolic Disease in the Deep South**- *The project tests the combination of two evidence-based interventions: Journey to Better Health (JTBH) and Harvest for Health (H4H). JTBH is a face-to-face group weight loss program focused on achieving weight loss by reducing caloric intake (~500 kcal/day) and regular moderate-intensity PA (>180 minutes/week). JTBH has multiple levels of influence, including individual (e.g., health behaviors) and interpersonal (e.g., social support). It includes a 6-month intensive behavioral intervention that included weekly 90-minute sessions (Phase I) designed to be participant-centered and interactive and include guided physical activity or food demonstration. Harvest for Health (H4H) Intervention is a collaboration with USDA Cooperative Extension Services.*
- **Improving Weight Loss and Cardiometabolic Risk in Black Primary Care Patients with Obesity and Diabetes** - *The project tests the effectiveness of an innovative, digital technology focused 24-month, patient-centered approach to weight-loss, facilitated by an electronic medical record (EHR). It is an adaptation of PROPEL (Promoting Successful Weight Loss in Primary Care in Louisiana) in patients with obesity and type 2 diabetes mellitus. The intensive program includes face-to-face video coaching sessions, access to program materials and personalized weight loss graphs through their patient portal.*
- **Food Delivery, Remote Monitoring, and coaching-Enhanced Education for Optimized Diabetes Management (FREEDOM)** - *The objective of the Food Delivery, Remote Monitoring, and Coaching-Enhanced EDucation for Optimized Diabetes Management (FREEDOM) study is to develop a multilevel, and scalable intervention to improve T2DM control in low-income African American adults with T2DM and cardio-renal complications in the Deep South by targeting relevant SDOH. The FREEDOM study design will evaluate three intervention components: 1) digital health coaching, 2) food box delivery, and 3) remote patient monitoring.*

1P50MD017342-01, Allen, Michele (contact); Hardeman, Rachel, University of Minnesota, *Center for Chronic Disease Reduction and Equity Promotion Across Minnesota (C2DREAM)*

- **Healthy Immigrant Community: Mobilizing the Power of Social Networks** - *This project is a social network intervention that aims to: 1) assess the efficacy of a social network-informed CBPR-derived health promotion intervention on obesity and other measures of cardiovascular risk in two immigrant communities (Somali and Hispanic) and, 2) assess the impact on sustainability and uptake outcomes of embedding the intervention within a regional health promotion resource hub.*

- **A Pragmatic Trial of Chronic Disease Approaches To Ameliorate Tobacco Related Cardiovascular Disease Health Disparities** - *The project will assess the effect of augmenting the standard of care for connecting patients who smoke with evidence-based cessation treatments (EBCT) such as Ask-Advise-Connect (AAC). The AAC targets the provider and the health system, such that people who smoke are electronically referred through the Electronic Health Record (EHR) to the state Quitline for counseling. AAC is a streamlined adaptation with the goal of increasing behavioral counseling and minimizing the barriers to connection with a cessation treatment provider.*

- **Native American Youth Cardiovascular Disease Prevention: Implementation of Culturally-Tailored Evidence-Based After School and Home Visitation Programs for Healthy Eating and Physical Activity** - *The project intends to implement two evidence-based interventions. NET-Works was successful in slowing increases over three years in child energy intake and intake of added sugars, and reduced screen time, and in slowing body mass index gain in overweight children and Hispanic children. GOALS was successful in slowing body mass index, reducing systolic and diastolic blood pressure and total cholesterol, lowering LDL cholesterol, and reducing increases in energy intake, calories from fat and calories consumed in front of small screens.*

1P50MD017349-01, Huang, Elbert (contact); Lynch, Elizabeth, University of Chicago, *Chicago Chronic Condition Equity Network (C3EN)*

- **Keep it Movin': A Church-based Intervention to Improve Physical Function in African Americans** - *Churches in both study arms will receive a virtual walking program in which church members will use the Walker Tracker technology to track their steps and engage in activity "challenges". Walker Tracker is a downloadable app with a built-in activity converter that translates non-walking activities (e.g., swimming) into steps and pairs with virtually every fitness device or fitness apps.*
- **VIDA: Virtual Diabetes Group Visits Across Health Systems** - *This study implements diabetes group visits where shared appointments with patients receive self-management education in a group setting and an individual medical visit as a means to improve glycemic control, decrease healthcare utilization, and provide social support and co-learning among peers.*
- **Voice-Activated Technology to Improve Mobility & Reduce Health Disparities: EngAGEing African American Older Adult-Care Partner Dyads** - *The project is implementing an exercise tool targeting multimorbid, homebound older adults and their care partners called EngAGE that leverages voice-activated technology. EngAGE has three technology components: a web browser, a mobile application, and smart voice speaker. The program delivers existing rehabilitation content from the "Go4Life" program developed by the National Institute on Aging (NIA). Go4Life exercises were intended to be done in the home with household equipment.*

1P50MD017366-01, Brown, Arleen (contact); Boden-Albala, Bernadette, University of California Loa Angeles, *UCLA-UCI Center for Eliminating Cardio-Metabolic Disparities in Multi-Ethnic Populations (UC END-DISPARITIES)*

- **BP REACH: Blood Pressure disparities Reduction, Equity, and Access among safety net patients with Cardiovascular Health risk** – *The project is a multilevel, culturally tailored, complex intervention for reducing BP among multiracial, multiethnic individuals with a history of stroke or MI in the LAC-DHS safety-net public healthcare system. The intervention will extend the traditional care team, by including: (1) a pharmacist to manage medications, address health and medication literacy, and explore and address barriers to medication adherence; (2) a community health worker to assess and address SDOH, enhance participants' telehealth access, and boost self-management skills and health literacy; (3) technology, including WiFi enabled BP monitors, video visits, and use of the patient portal; and (4) culturally and linguistically tailored educational materials including narrative videos.*
- **UCLA-UCI Center for Eliminating Cardio-Metabolic Disparities in Multi-Ethnic Populations** - *The project plans to create a culturally tailored primary prevention of hypertension intervention, skills-based educational strategies to reduce vascular events in Orange County (SERVE OC) set within a supportive family structure and utilizing a community health worker model. The primary objective will be to evaluate the efficacy of family-based SERVE OC intervention versus enhanced usual care in achieving "ideal" cardiovascular health using AHA LS7 score and a significant decrease in systolic blood pressure among adults.*

1P50MD017348-01, Cooper, Lisa (contact); Crews, Deidra, Johns Hopkins University

The Mid-Atlantic Center for Cardiometabolic Health Equity (MACCHE)

- **Effectiveness of an evidence-based health coaching program for reducing cardiometabolic risk among women and infants enrolled in early home visiting services** - *The project is designing and testing an evidence-based pregnancy/postpartum health coaching intervention that is remotely delivered (phone coaching using motivational interviewing + web-based platform + mobile phone behavioral tracking) in Hispanic women along with Maryland home visiting partners. The objective is reducing postpartum weight retention (difference between pre-pregnancy weight and weight at 6 months postpartum.*
- **A Cardiometabolic Health Program LINKED with Clinical-Community Support and Mobile HEAlth TelemonitoRing in Underserved PopulaTionS (LINKED-HEARTS PROGRAM)** - *The LINKED-HEARTS Program focuses on addressing structural issues of access and includes a self-measured blood pressure (SMBP) and blood glucose telemonitoring platform; team-based care including a pharmacist and community health worker and provider-level interventions. The project will compare the effect of the LINKED-HEARTS Program versus SMBP alone in improving BP control in adults with uncontrolled hypertension and either diabetes or chronic kidney disease.*
- **Understanding and addressing risks of low socioeconomic status and diabetes for heart failure** - *The project is testing the effects of a multi-level intervention of problem-solving training, CHW support, and partnership with community facilities to support lifestyle change on fitness, risk factor control, markers of cardiac injury/fibrosis and quality of life in individuals with low SES, DM, obesity and early cardiac dysfunction.*

1P50MD017341-01, Terry, Mary Beth (contact); Cohn, Elizabeth, Columbia University Health Sciences, *Center to Improve Chronic Disease Outcomes through Multi-level and Multi-generational Approaches Unifying Novel Interventions and Training for Health Equity (The COMMUNITY Center)*

- **Addressing Sleep Duration, Regularity, and Efficiency: A Multidimensional Sleep Health Intervention for Reducing Ethnic Disparities in Cardiometabolic Health (The DREAM Study)** – *The project is a multidimensional sleep health (MDSH) intervention which incorporates multiple interrelated modifiable sleep characteristics (duration, regularity, and efficiency) as important for addressing drivers of sleep health disparities in Hispanics.*
- **Intervention to iMProve AdherenCe equiTably (IMPACT TRIAL)** – *The project is developing and testing a multicomponent intervention (i.e., pharmacist-led regimen optimization, community health worker-led coaching, patient portal and smartphone medication reminder application training, and pharmacy fill adherence monitoring) that reduces disparities in patients with multiple chronic conditions by improving adherence to medications.*
- **Community Health workers United to Reduce Colorectal cancer and CVD among people at Higher risk (CHURCH)** – *The project is a community-academic partnership model for the implementation of a CHW-led intervention to reduce dietary and CVD risk factors linked to colorectal cancer. This will be addressed by culturally adapting an existing, evidence-based, web-based lifestyle program called Alive! which has been shown in several clinical trials to improve CVD outcomes.*

1P50MD017341-01, Terry, Mary Beth (contact); Cohn, Elizabeth, Columbia University Health Sciences, *Center to Improve Chronic Disease Outcomes through Multi-level and Multi-generational Approaches Unifying Novel Interventions and Training for Health Equity (The COMMUNITY Center)*

- **ACHIEVE P1 - HTN** - *The project is implementing a program that links low cardiovascular risk African American adults with stage 1 hypertension to collaborative care delivered by non-physicians, CHWs and pharmacists, consisting of a personalized, adaptable approach to lifestyle and life circumstance intervention.*

- **ACHIEVE P2 – HF** - *The project is a CHW engagement multi-level intervention trial with currently untreated hypertension and elevated risk for progression to clinically manifested heart failure. The approach is that the combined direct and indirect impact of strategies to mitigate negative SDOH, coupled with enabling capacity to implement the promoted lifestyle changes, and initiate appropriate medical therapy, along with facilitating medication possession and adherence will significantly lower BP and prevent progression towards heart failure compared to usual care.*

- **ACHIEVE P3 – CHD** - *The project is a CHW intervention that targets SDOH, medical, lifestyle and life circumstance risk while improving access and linkage to care in patients with ≥2 cardiometabolic risk factors. Patients with high cardiovascular risk factors will receive a higher acuity individualized intensive multidisciplinary cardiometabolic care within the context of the lifestyle intervention.*

1P50MD017319-01, Cornell, Carol (contact); Fagan, Peebles, University of Arkansas for Medical Sciences, *The Center for Research, Health, and Social Justice*

- **FRESH Delivers: An Innovative Approach to Reducing Tobacco Use Among Rural Black/African American Smokers** – *The project tests the efficacy of the addition a social change intervention (home food delivery) versus real-time video-based motivational counseling alone on smoking abstinence, cigarette abuse, and treatment.*
- **Reducing Alcohol Use among Black Men: Barbershop SBIRT** – *The project is testing the effectiveness of an evidence-based Screening, Brief Intervention, and Referral to Treatment (SBIRT) intervention with the goal of reducing unhealthy drinking behaviors.*
- **Evaluation of a Comprehensive School Nutrition Enrichment Intervention (CSNEI) in Rural School Districts** – *The project is designed to evaluate the effectiveness of a school district-wide comprehensive nutrition policy intervention in rural Arkansas schools to change body mass index (BMI).*

1P50MD017347-01, Wilkins, Consuelo, Vanderbilt University Medical Center, *Southeast Collaborative for Innovative and Equitable Solutions to Chronic Disease Disparities*

- **Accelerating Health Equity via Just-InTime Adaptive Interventions (JITAIs): Scalable and High Impact mHealth Precision Smoking Relapse Prevention** – *The project is evaluating a smartphone app (QuitBuddy) that will automatically guide NRT treatment delivery.*
- **A Multilevel Intervention to Reduce Disparities in Obstructive Sleep Apnea and Related Cardiometabolic Outcomes** – *The project is a randomized controlled trial comparing Motivational Enhancement Therapy (MET) versus standard of care, in patients with OSA, assessing adherence to PAP therapy and its downstream effects on blood pressure, daytime sleepiness, quality of life, and healthcare utilization.*

1P50MD017356-01, Dong, Xinqi, Rutgers Biomedical/Health Sciences - RBHS, *Rutgers-NYU Center for Asian Health Promotion and Equities*

- **HomeStyles: Shaping HOME Environments and LifeSTYLE Practices to Reduce Cardiometabolic Disease Risk** – *The project is a RCT to test a multicomponent, culturally tailored intervention on subjective health behaviors (dietary intake, physical activity, self-efficacy) and objective health outcomes (HbA1C, waist circumference, BMI).*
- **NYUCI-ES: Psychosocial Intervention to Improve Health Outcomes for Chinese and Korean ADRD Caregivers** – *The project is a culturally tailored intervention that includes individual and family counseling and ongoing on demand counseling, support groups and online chat groups. Primary goal is reducing negative psychological and health risks for cardiometabolic disease outcomes of caregiving and delaying nursing home placement.*

NIMHD Multiple Chronic Disease Disparities Initiative

RFA-MD-21-008, NIMHD Multiple Chronic Disease Disparities Research Coordinating Center (RCC) (U24)

1U54MD017250-01, Charlebois, Edwin Duncan (contact); Gansky, Stuart A; Rhoads, Kim Felder, University of California San Francisco, *Research Coordinating Center to Reduce Disparities in Multiple Chronic Diseases (RCC RD-MCD)*

National Institute on Minority Health and Health Disparities

Chronic Disease Coordinating Center Components

Organization and Management. Promoting collaboration and communication among all MCD Centers investigators and the broader research community. Planning, coordination, facilitation of in-person and virtual MCD Centers meetings including the startup meeting, monthly steering committee meetings, webinars, conference calls, an annual meeting, and other PD/PI meetings, as needed.

Research Coordination and Data Analysis. Coordination of collaboration and resource sharing among the MCD Centers and dissemination of research resources (e.g., measurement instruments and procedures, protocols, statistical analysis tools, algorithms, study design resources, recruitment techniques, and study forms and templates). In collaboration with the MCD Centers the development of common data elements, data and metadata standards, and data collection processes. Provide methodological consultation to MCD Center investigators on study design, regulatory compliance, biostatistics, bioinformatics and computational biology, data science, data management and analysis.

Research Skills Development. Coordinate efforts to establish and maintain diverse skills development opportunities built upon the expertise of the MCD Centers that will address the needs of MCD researchers within various professions and settings.

Community Engagement. Monitor the extent to which community engagement activities at MCD Centers foster sustainable relationships with community-based organizations, enhance minority participation in research, and promote dissemination of research findings to communities to address their health-related concerns.