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Title of Initiative: Latin America: Synergizing Health Research Across the Hemisphere

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Objective: To support innovative, multidisciplinary and collaborative research that: (1) addresses health and health care disparities related to non-communicable diseases (NCDs) with the highest disease burden and mortality in Latin America and among U.S. Hispanics/Latinos; (2) generates greater understanding of Hispanic/Latino health in ways that cannot be accomplished in the U.S., and (3) translates into optimal health outcomes across the hemisphere.

Background: As of 2020, 62.1 million (18.9%) persons living in the U.S. 50 States self-identified as Hispanic/Latino. The U.S. Hispanic/Latino population is constituted by communities that have lived in this land long before it became to be known as the United States, have immigrated to the U.S., or live in U.S. territories. Many U.S. Hispanics/Latinos maintain contact with their or their ancestors' country of origin.

Despite recommended guidelines for prevention, diagnosis and care for many NCDs, the prevalence, awareness, treatment and control goals for these conditions among U.S. Hispanics/Latinos at large are conspicuous public health and clinical care concerns. Furthermore, the landmark Hispanic Community Health Study/Study of Latinos has described differences in the prevalence of health risk factors and NCDs among U.S. Hispanics/Latinos from different heritage groups. For example, a significantly higher prevalence of the five traditional cardiovascular risk factors (CVRFs) and self-reported cardiovascular disease (CVD) among study participants of Puerto Rican descent, a greater prevalence of hypertension among Hispanics/Latinos of Caribbean descent, a greater risk of developing chronic kidney disease (CKD) among those of Puerto Rican descent, and higher prevalence of diabetes among Hispanics/Latinos of Mexican, Puerto Rican and Dominican descent have prevailed over time. In contrast, at the national level, all-cause, cardiovascular, and cancer mortality for U.S. Hispanics/Latinos (as a group) has been consistently lower than for Whites and African Americans. However, differences in mortality rates among those of Mexican, Puerto Rican and Cuban descent have been documented. Remarkably, interpersonal violence and suicide are among the top three leading causes of death among U.S. Hispanics/Latinos aged 15-34 years. In 2020, the mortality differences observed in the U.S. Hispanic/Latino population significantly narrowed as a result of high COVID-19 mortality.

In parallel, NCDs have been progressively recognized and studied in Latin America. There are notable differences in both mortality due to NCDs, and the prevalence of these conditions, including dementia and other neurodegenerative disorders, also varies among countries. For

example, although the prevalence of diabetes is increasing throughout the region, it has been consistently higher in Mexico and Puerto Rico, where this condition is also one of the five leading causes of death. Suicide and homicide are associated with a significant proportion of deaths throughout Latin America, while the burden of non-fatal interpersonal violence is also significant. COVID-19 lashed Latin America, leaving behind strained health care systems, and long-term consequences still to be understood.

At the same time, multiple innovations have been emerging throughout Latin America that could impact the health of all Hispanics/Latinos in the hemisphere and transcend to other populations. For example, significant breakthroughs have taken place in Latin America studying the mechanisms of premature onset Alzheimer's disease (AD), clinical manifestations preceding AD, and clinical phenotypes of AD in different Latin American countries; gaining insights on genetic ancestry, social determinants of health, and risk for type 2 diabetes; and calibrating the pharmacogenomics and dosing of anticoagulation therapy. Also, the integration of various digital technologies into health care has been successful in different settings, including cancer care; models of innovative comprehensive diabetes care, including diabetes self-management; multidisciplinary diabetic foot care; management of diabetic retinopathy referral; and rapid assessment of retinopathy/blindness.

Of interest, less than 5% of the FY2008-2019 NIH Research Program Grants (RPGs) portfolio focused on Hispanic/Latino health, including Latin America. Further analysis of RPGs addressing six NCDs revealed that clinical translation (12.5%), health services (10.9%), and community-based participatory research (12.0%) ranked at the lowest percent of funding. The NIH World Report also indicates a lower number of NIH-funded research in Latin America compared to other world regions. And an unpublished analysis of NIH-funded research activities in Latin America between FY2008-FY2021 revealed that only 35% focused on NCDs.

Considering the persistent disparities related to NCDs experienced by U.S. Hispanics/Latinos, differences in health profiles among U.S. Hispanic/Latino populations, and parallel differences—and similarities—across Latin American countries, bold and strategic collaborations between the U.S. and Latin America would create a turning point in the improvement of health outcomes and the reduction of health disparities among these populations. Such collaborations would uncover mechanisms or mediators of such differences, and a further understanding of the sociocultural, environmental, clinical care/research, and health care contexts that cannot be solely understood or identified through research in the U.S. This would strengthen needed interventions to promote timely prevention, high quality health care, and better health outcomes for NCDs across the hemisphere.

Description of Initiative: In addition to the statements under the Objective, research projects would be expected to address more than one NCD (multiple chronic conditions, or MCCs) with highest burden of disease and mortality experienced by both U.S. Hispanics/Latinos and Latin Americans. Considering the significant incidence of both fatal and non-fatal interpersonal

violence across Latin America and U.S. Hispanic/Latino communities, research on this topic is also of interest. Research teams are expected to include both U.S.-based and Latin America-based investigators. Projects performed in countries highly represented in the U.S. Hispanic/Latino population would be prioritized, and collaborations between those countries and others less represented could be considered. Although the award recipients would be U.S.-based institutions, Latin American-based institutions would receive a larger proportion of the budget and research activities. Studies could incorporate a research training/capacity building component within the context of the proposed research topics.

Research Priorities (examples):

- Studies on clinical disease phenotypes or clinical manifestation of NCDs (e.g., diabetes, prediabetes, hypertension, cancer, heart failure, long COVID-19, pulmonary disease, chronic kidney disease, liver disease, dementia, other neurodegenerative disorders, and other chronic diseases), leading to more accurate and timely diagnoses, tailored prevention, and effective care.
- Studies that develop, test and/or evaluate interventions that optimize prevention and treatment effectiveness, improve patient self-management, and reduce preventable complications.
- Studies that develop, test and/or evaluate interventions that optimize health outcomes related to the care of coexisting chronic communicable diseases (e.g., hepatitis C, HIV/AIDS) and NCDs.
- Studies that explore the risk profile and burden of interpersonal violence on health, and address potential interventions.
- Studies that evaluate the relationship between COVID-19 and risk or exacerbation of diabetes, CVD and other NCDs.
- Studies that develop, test and/or evaluate innovative health care models that incorporate guidelines for the care of MCCs within the context of low resource settings. Models could combine clinical and/or community and/or home-based and/or health information/digital components, and assess health disparities, feasibility and sustainability, attainment of optimal health outcomes, and best practices.
- Studies that develop, test and/or evaluate innovative approaches for access to, quality of, and optimal continuity of care, especially for underserved populations (e.g., indigenous populations, older adults, rural communities, Latin American communities of Afro descendant communities).
- Studies on the impact of health care and non-health care policies (e.g., policies in U.S. territories) on successful implementation of innovative health care models.
- Studies that assess and/or develop or test health care systems' effective management of public health emergencies, disasters, and other humanitarian crises. Studies that assess and/or test interventions on community vulnerability and resilience to those events (and other environmental changes) are also of interest.

- Studies that test and evaluate barriers, facilitators, and best practices regarding the implementation of health technologies at different levels (e.g., individual, clinical/health care settings, social determinants of health [SDoH], policies, infrastructure).
- Studies that assess the conceptualization of community and the contextualization of SDoH, and how these can be optimally integrated into community-engaged research.
- Studies that develop, test and/or evaluate home- and/or community-based strategies and/or community partnerships to optimize health promotion among underserved populations. Studies that inform the best health promotion strategies for indigenous populations, communities of U.S. immigrants from indigenous populations, and Afro-descendant communities are of interest.
- Studies that develop, test and/or evaluate the effective integration of social and health services (e.g., food security, housing, education).
- Projects that assess the impact of interpersonal violence on collective mental health, and potential community-level interventions.
- Studies that explore the conceptualization of race and ethnicity throughout Latin America, and how it relates to racism and discrimination, SDoH, health care and health outcomes.
- Studies that explore mechanisms of resilience and protective health factors specifically related to mortality or longevity.