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Building Bilateral Health Solutions: a Government-Academic Partnership to Improve Community Health

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Abstract

This article details the process of developing a groundbreaking academic-government partnership between the University of Illinois Cancer Center (UICCC) and Cuba's Ministry of Public Health (MINSAP). This first-of-its-kind collaboration aimed to address maternal and child health (MCH) inequities in Englewood, a structurally underserved, predominantly Black neighborhood in Chicago. Cuba's healthcare system, globally recognized for its innovative and community-based primary care model, boasts an infant mortality rate (IMR) of 4.3 deaths per 1,000 live births, compared to the U.S.'s 5.6. This remarkable achievement, despite limited resources, highlights Cuba's success in leveraging preventive care and universal access to improve public health outcomes.

The manuscript serves as a process paper, documenting the formation of this unique partnership and its efforts to adapt Cuba's Health Situation Analysis (HSA) framework to the U.S. context. It outlines the steps involved in securing regulatory approvals, fostering cross-cultural exchange, and engaging the local Englewood community to address health disparities. By leveraging Cuban expertise in primary care and addressing social determinants of health, the partnership sought to create actionable solutions to reduce infant mortality and improve overall health equity.

The article provides valuable insights into the challenges and successes of cross-national collaborations, offering a replicable model for addressing systemic health inequities in underserved communities. By detailing the partnership's development, this work emphasizes the importance of culturally competent, community-centered approaches to transforming health outcomes in resource-constrained settings. Lessons from this initiative underscore the potential of global partnerships to drive innovation and equity in public health.

Keywords: *bilateral collaboration, maternal and child health, healthcare delivery, Cuba-U.S. relations, community health, infant mortality, health inequities*

Introduction

Dynamics between the United States (U.S.) and Cuba are shaped by a complex interplay of political, economic, and social factors, as well as their location just 90 miles apart (Espinosa, 2006; Rehman *et al*., 2024). Despite their geographic closeness, the U.S. and Cuban healthcare systems differ significantly (Ciano, 2024). Cuba has emerged as a global leader in community health and preventative medicine, achieving remarkable public health outcomes in low-resource contexts, both domestically and internationally (Keck & Reed, 2012). In contrast, with the highest per-capita spending globally, the U.S. healthcare system operates within a framework that effectively treats many disease conditions for those with access. (Papanicolas *et al*., 2018)

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Gaps in the U.S. public health and preventative care infrastructure contribute to significant health inequities (systematic differences in health or health risks disproportionately affecting disadvantaged social groups due to social, economic, and policy-driven factors).(Braveman, 2006) These health inequities are particularly evident in maternal-child health (MCH) outcomes, such as infant mortality, where Black babies die at more than 2.5 times the rate of white babies, (Singh & Yu, 2019) largely due to structural inequities and unequal access to vital resources for health and well-being (Wallace, Crear-Perry, Richardson, Tarvar & Theall, 2017). In contrast, with comparatively fewer resources, Cuba boasts an infant mortality rate (IMR) of 4.3 deaths per 1,000 live births —lower than the overall U.S. IMR — (Table 1, Espinosa, Lauzurique, Alcázar, *et al*., 2018). This contrast highlights the potential for cross-national partnerships with Cuba to inform strategies that address U.S. health inequities, particularly the disproportionate rates of high infant mortality observed in impoverished communities of color (Brun, Pawloski & Robinson, 2019).

Historically, healthcare providers, scientists, and public health professionals in the United States (U.S.) have had limited opportunities to collaborate with or learn from their counterparts in Cuba despite shared public health challenges and interests (Pastrana & Clegg, 2008). These include advancements in understanding disease transmission, weather science for mitigating tropical storm damages, and Cuban innovations in public health, healthcare, and biotechnology (Pastrana & Clegg, 2008; Jorje-Pastrana, Gual-Soler & Wang, 2018). Onerous requirements for scientific travel and exchange have posed significant challenges to collaboration, impacting scientific advancement and productivity (DeWeerdt, 2001; Fink, Leshner & Turekian, 2014; Ronda-Pupo, 2024). However, there have been notable instances of scientific collaboration, particularly during the Obama administration, which fostered partnerships in marine science, ocean conservation, and other areas of shared interest (Machlis et al., 2012). Collaborative efforts, such as those between the Cuban Academy of Sciences and the American Association for the Advancement of Science (Pastrana, Gual-Soler & Wang, 2018), demonstrate that scientific networks can persist and thrive even in the face of historical tensions and restrictive policies (Ronda-Pupo, 2021).

The Obama administration sought to ease tensions with Cuba through policies to restore diplomatic relationships, fostering opportunities for scientific collaboration between the two nations (Morrison & Gannon, 2015). These efforts culminated in re-establishing diplomatic ties in 2015, marking a significant shift after decades of strained relations (Alexandra, 2019; Lee & Park, 2016). Within this context, a groundbreaking partnership was initiated between the University of Illinois Cancer Center (UICCC) and the Cuban Ministry of Public Health (MINSAP). This collaboration represented the first governmental-academic partnership between Cuba and a U.S. research institution. The initiative aimed to leverage Cuba's effective healthcare delivery and public health practices to address maternal and child health (MCH) inequities in structurally underserved communities in Chicago. By adapting Cuban MCH care models to the local context, the partnership sought to tackle specific health challenges these communities face and improve overall health outcomes (Kim *et al.*, 2019).

Herein, we describe the partnership and our work together implementing Cuban Health Situation Analysis (HSA) in a low-income, predominantly Black neighborhood of Chicago, Englewood, where IMRs are approximately three times the U.S. national average (Bishop-Royse, Lange-Maia, Murray, Shah & DeMaio, 2021). We will first provide context for our work with an overview of U.S. health inequities related to infant mortality, the Cuban context, HSA as a tool for improving health outcomes, and the community of Englewood, which parallels the low resource settings seen in other developing nations. Next, we describe the formation of the partnership as a response to the needs identified by Englewood residents, including policy-level hurdles to collaborative work. Once our partnership had secured funding and needed approvals, a MINSAP delegation consisting of two Cuban primary care physicians, a community nurse, and an epidemiologist visited UIC for four months of intensive collaboration. During that time, we utilized the HSA framework in Englewood. While the findings of the HSA will be detailed in a forthcoming publication, the results section focuses on the partnership itself, emphasizing the processes, challenges, and impacts of our collaborative efforts.

Finally, in the discussion section, we argue for increased scientific collaboration, building on the groundbreaking precedent we set for governmental cooperation in health research and practice between the U.S. and Cuba.

By fostering such partnerships, there is potential to improve health outcomes in communities like Englewood and create a model for addressing health inequities across the U.S. This initiative represents a significant milestone in global health collaborations and underscores the importance of community engagement and culturally competent healthcare solutions.

The U.S. Health Inequities in Infant Mortality

Despite the highest healthcare spending of any country on Earth, the U.S.'s IMR lags behind 25 other Organisation for Economic Cooperation (OCED) countries (MacDorman, Mathews, Mohangoo & Zeitlin, 2014). Notably, infants born very preterm in the U.S. survive at comparable rates to their European-born counterparts, which speaks to the U.S.'s utilization of expensive medical technologies and curative expertise in keeping very premature babies alive. However, babies' survival rates decrease with gestational age; moderately preterm and term babies are more likely to die in the U.S. than in almost all other OECD countries (MacDorman, Mathews, Mohangoo & Zeitlin, 2014). The high mortality rates for babies born slightly before and at term reflect social drivers of health and gaps in preventative, primary care, and public health infrastructure despite access to the advanced medical technology necessary for keeping very premature babies alive. (Lorenz, Ananth, Polin & D'Alton, 2016). Importantly, structural inequities and unequal access to care significantly contribute to stark disparities in MCH and birth outcomes (Alhusen, Bower, Epstein & Sharps, 2016). These inequities are evident in IMRs, which varied in 2018 from 10.8 per 1,000 live births among Black populations to 9.4 among Native Hawaiian and Pacific Islander, 8.2 among Native American/Indigenous and 4.6 among white populations. These disparities resulted in an overall U.S. IMR of 5.58 per 1,000 live births (Table 1, Jang & Lee, 2022) and are due to several factors, including documented differential access to prenatal care and differential treatment by healthcare providers, contributing to earned mistrust of the healthcare system (Attanasio & Kozhimannil, 2015; Salm Ward, Mazul, Ngui, Bridgewater & Harley, 2013; Slaughter-Acey *et al*., 2019).

Table 1 - Health Indicators in Englewood, as Compared to Chicago, Illinois state, the U.S., and Cuba

Indicator	Englewood (Chicago)	Chicago	Illinois	U.S.	Cuba
Infant Mortality Rate (per 1,000 live births)	17.3	6.3	5.6	5.6	4.3
Unemployment Rate	22.40 %	8.20%	3.90%	3.40%	1.40 %
Less than High School Education	20.80 %	13.40%	9.90%	10.90%	0.20 %
Percentage of People Living Below the Poverty Line	36.02 %	16.93%	11.80%	12.50%	90 %
Median Income	$ 27,792	$ 71,673	78,433	75,149	$ 400
Percentage of Pregnant People Initiating Prenatal Care in First Trimester	71.60 %	75.00%	76.70%	77.00%	95.00 %
Percentage of Residents Who Are Black / African-American / Afro-Cuban	90.50 %	28.40 %	13.70 %	12.10 %	9.30 %
Data Sources and definitions in Appendix A					

A recent study suggests that patient-physician racial concordance in the delivery room reduced intrapartum Black infant mortality by a factor of nearly 50% (Greenwood, Hardeman, Huang & Sojourner, 2020). Patients of color with racially concordant providers are also more likely to utilize healthcare services, demonstrating the importance of culturally and racially aligned care (LaVeist, Nuru-Jeter & Jones, 2003). Structural inequities further exacerbate these disparities, with higher exposure linked to increased IMR among Black individuals while paradoxically decreasing IMR for white individuals (Vilda, Hardeman, Dyer, Theall & Wallace, 2021).

Residential segregation, often a result of systemic divestment from communities of color, remains a critical driver of racial differences in infant mortality. Segregated urban areas exhibit disproportionately higher mortality rates for Black infants (Polednak, 1996). Likewise, the stress associated with daily experiences of discrimination contributes to diminished MCH outcomes, including infant mortality (Alhusen, Bower, Epstein & Sharps, 2016; Slaughter-Acey *et al*., 2019). For example, a study found that after the surge in anti-Arab and anti-Muslim violence following the 9/11 World Trade Center attacks, women with Arabic surnames experienced significantly elevated rates of low birth weight and prematurity—both risk factors for infant mortality—suggesting a causal link between discrimination and adverse birth outcomes (Lauderdale, 2006). Similarly, longstanding evidence shows statistically significant associations between racial discrimination and adverse birth outcomes such as low birth weight and prematurity among Black pregnant individuals (Collins, David, Handler, Wall, & Andes, 2004).

Structural inequities also affect numerous social drivers of health, disproportionately impacting communities of color. These include higher rates of poverty and reduced access to essential resources such as nutritious food, stable housing, and opportunities for family and community connection (Beech, Ford, Thorpe, Bruce & Norris, 2021; Dagher & Linares, 2022). A study of Chicago neighborhoods found that IMRs in low-income communities were an average of 2.53 times higher compared to affluent neighborhoods, with rates ranging from 1.4 in the wealthiest areas to 24.5 in the poorest. Neighborhoods with the highest concentrations of Black residents experienced IMRs that were 3 to 3.5 times higher than in predominantly white neighborhoods, further underscoring the profound impact of structural inequities (Bishop-Royse, Lange-Maia, Murray, Shah & DeMaio, 2021).

Cuban Health System Advances

Cuba's health system has drawn significant attention for its achievements in public health, particularly in MCH. For instance, a study comparing birth outcomes in rural Alabama to those in Cuba highlighted the success of Cuba's community-based healthcare approach in reducing the prevalence of low birth weight, a key predictor of infant mortality (Neggers & Crowe, 2013). The Cuban model, characterized by integrated services and a strong emphasis on preventive care, has been recognized as a potential source of insights for U.S. healthcare reform (Cooper, Kennelly, & Ordúñez-García, 2006; Keck & Reed, 2012). Cuba's focus on universal access and community-oriented primary care has consistently delivered improved health outcomes, despite economic challenges (Dresang, Brebrick, Murray, Shallue & Sullivan-Vedder, 2005; Watson, Rhein & Fanelli, 2021). Furthermore, Cuba's robust engagement in global health initiatives and its contributions to international medical education —training thousands of healthcare professionals, including some from the U.S.— provides a strong foundation for fostering future collaborative efforts (Motala & Wyk, 2019; Wenham & Kittelsen, 2020).

Health Situation Analysis Overview

The core framework of this collaboration centers around the Health Situation Analysis (HSA), an analytical tool supported by the World Health Organization and extensively applied within Cuba's public health system to evaluate and prioritize healthcare needs in resource- limited settings (Pyone, Smith & Broek, 2017). HSA originated in Cuba following the 1984 National Health System reforms, which introduced the "Family Doctor and Nurse" model (Lamrani, 2021). As part of this model, HSA became a cornerstone for addressing community health issues and informed public health decision-making across multiple levels. Structured as an "analytical-synthetic process," HSA assesses the health status of a population by identifying health problems, social drivers, and health sector needs. By measuring health indicators and determinants, HSA supports governments and health systems in resource-constrained environments, informing needs assessment, program development, and outcome evaluation.

The application of HSA extends beyond individual clinical care to community-level health planning, strongly emphasizing prevention and addressing structural inequities through data-driven insights. HSA's cross-sectorial approach provides a comprehensive understanding of social drivers, providing an evidence-based framework for prioritizing public health interventions. It has proven effective in supporting political and institutional prioritization, mobilizing resources, and developing health policy. The Cuban healthcare model's success in maintaining

low infant mortality and high life expectancy in low-resource settings is primarily attributed to this integrative and preventive approach, which has also demonstrated adaptability in diverse populations outside of Cuba (Gorry, 2013).

Englewood, Chicago, United States

Englewood, a neighborhood of approximately 21,000 residents on Chicago's South Side, faces profound socioeconomic challenges, systemic health inequities, and long-standing governmental disinvestment (Chicago Metropolitan Agency for Planning, 2024). The community is predominantly Black (90.5%), compared to 28.4% of Chicago's overall population, in a city and state marked by high levels of residential segregation and the resulting maternal and child health (MCH) inequities (Bishop-Royse, Lange-Maia, Murray, Shah, & DeMaio, 2021). Educational attainment in Englewood reflects significant disparities, with over 20% of adults lacking a high school diploma—nearly double the rate citywide—and more than 52% having never pursued education beyond high school (CMAP, 2024). These factors contribute to an unemployment rate of 22.4%, almost triple Chicago's overall rate of 8.2%. The neighborhood's disability rate is similarly alarming, with 23.6% of residents living with disabilities —more than double the citywide rate of 11.3%— and limited access to necessary supportive services exacerbating this issue. Economically, Englewood's median household income is strikingly lower than the Chicago average. Nearly half of all households in Englewood earn less than $25,000 annually, with an additional 22% earning between $25,000 and $49,999, starkly contrasting with the citywide rates of 20% and 17%, respectively (CMAP, 2024).

These disparities underscore the inequitable distribution of resources and opportunities, which are deeply rooted in structural segregation and disinvestment. The city of Chicago assigned Englewood a hardship index score of 94, one of the highest in the city (Chicago Data Portal, undated). This chronic disinvestment directly contributes to adverse health outcomes, including elevated rates of infant mortality and low birth weight that rival those in developing countries (Zaimi, 2021). Englewood residents also experience disproportionately high rates of chronic illnesses, such as diabetes and heart disease, along with some of the lowest vaccination rates in Chicago, reflecting inconsistent access to healthcare services (Krumrey, 2021).

Significant gaps in transportation infrastructure and vehicle ownership compound these challenges, with nearly 50% of Englewood residents lacking access to a vehicle (CMAP, 2024). This transportation deficit limits access to essential healthcare services and resources (Tung *et al*., 2019). Furthermore, disinvestment has fueled elevated crime rates, poorer overall health outcomes, and reduced lifespans. On average, Englewood residents live at least seven years less than other Chicago residents (Krumrey, 2021). These interwoven challenges highlight the profound impact of systemic inequities on Englewood's social and health landscape.

Englewood is served by the Mile Square Health Center, a Federally Qualified Health Center (FQHC). FQHCs are community health clinics designed to address healthcare shortages and provide primary care and other essential health services to vulnerable populations (Xue et al., 2018). Unlike many other healthcare institutions in the U.S., FQHCs are mandated to offer comprehensive services to all patients, regardless of their ability to pay. This makes FQHCs an essential safety net, especially for the 25.6 million U.S. residents who lack health insurance, which otherwise provides coverage for healthcare services through paid premiums or government assistance (Department of Health and Human Services, 2024).

However, when UIC partnered with the FQHC as part of a grant to increase cancer screening utilization, we identified significant gaps in engagement and a visible disconnect between the community and the clinic. Many Englewood residents expressed disenfranchisement and a lack of trust in healthcare systems, undermining their participation in available services (Moss et al., 2022). Through conversations with FQHC patients and other community members, we uncovered a pervasive perception that the FQHC was primarily an STI clinic, a legacy of its historical role. This misconception left many residents unaware of the clinic's expanded scope of services and its commitment to providing free care for those unable to pay.

Community members also voiced frustration over persistently high infant mortality rates (IMRs), a deeply felt and urgent priority for the neighborhood. Many saw this as an unjust burden compounded by what they

perceived as insufficient effort from the FQHC, the university, and other institutions to address this critical issue. Responding to these concerns, we embarked on a collaborative learning process to identify interventions and strategies that could effectively reduce infant mortality and address maternal and child health (MCH) inequities in Englewood.

Development

Partnership Initiation and Formation

The UICCC's engagement with Cuban health practices began in 2015 when Dr. Robert Winn, then Director of the UICCC, joined a team in Cuba to explore its exemplary health outcomes. During this visit, the team participated in the CUBA-SALUD conference, analyzing national health indicators such as infant mortality and life expectancy, particularly within low-income, multiracial populations (Cuban Ministry of Public Health, n.d.). When community residents in Englewood identified reducing infant mortality as a top priority, we set out to address the profound health inequities in the neighborhood. Initially, we conducted a thorough literature review and consulted national colleagues to identify effective U.S.-based interventions for reducing infant mortality. Unfortunately, we were unable to find models tailored to the unique needs and cultural nuances of Englewood.

This gap prompted us to consider the Cuban approach, renowned for its community-engaged care model and its emphasis on healthcare professionals being embedded within and deeply connected to the communities they serve. Recognizing striking parallels between the health challenges faced by structurally underserved communities in Chicago and those successfully addressed in Cuba, UIC identified the Cuban Health Situational Analysis (HSA) model as a promising framework for tackling health inequities. This approach offered a valuable opportunity to address maternal and child health (MCH) disparities while fostering community trust and connection in Englewood.

The UICCC's engagement with Cuban health practices began with a series of deliberate and collaborative steps to establish a partnership that could address pressing health inequities, including the high infant mortality rate (IMR) in Englewood. Initially, we worked with a local Chicago consulting firm to conceptualize what such a partnership with Cuba might look like. Building on these early efforts, we made initial connections with the Cuban Embassy in Washington, D.C., with MINSAP and the Cuban Ministry of Foreign Affairs (MINREX) to express our commitment to a mutually beneficial collaboration. These discussions emphasized the shared goal of addressing MCH inequities, particularly in underserved communities like Englewood.

We secured funding from the W.K. Kellogg Foundation, a key supporter committed to improving MCH outcomes in the U.S., to support this effort. Upon securing this funding, our communications extended to Ambassador Jeffrey DeLaurentis, then serving as Chief of Mission at the U.S. Embassy in Havana, Cuba. Ambassador DeLaurentis assisted us in navigating the necessary diplomatic channels and regulatory requirements, including preparing a proposal for submission to the Office of Foreign Assets Control (OFAC) and the Cuban Embassy in Washington, D.C., under the leadership of Dr. José Ramón Cabañas. The Cuban Embassy then submitted this proposal to MINSAP and MINREX to broker the partnership.

At this stage, we directly engaged with MINSAP leadership, leveraging relationships Dr. Winn had developed during his visit to Cuba in 2015, where he participated in the CUBA-SALUD conference. In his correspondence, Dr. Winn underscored our intent to create a mutually educational collaboration that could help address health inequities, particularly those related to infant mortality, as identified by Englewood residents as a top priority.

Recognizing the importance of sustained relationship-building and cultural concordance in fostering meaningful partnerships, Dr. Winn strategically built a team led by a bilingual and bicultural Puerto Rican epidemiologist with extensive experience in partnership development, program implementation, and process management. This combination of expertise and cultural insight uniquely positioned the team to bridge the collaboration by leveraging professional expertise and the natural connection rooted in the shared cultural and historical ties

between Puerto Rico and Cuba. This cultural concordance and deep understanding of the region's dynamics enriched the collaboration, strengthening the foundations of trust and mutual respect critical to the partnership's success.

These efforts culminated in establishing a formal partnership in 2016, supported by a W.K. Kellogg Foundation grant. This partnership laid the groundwork for developing and implementing innovative strategies to reduce health disparities in Englewood, rooted in Cuba's proven community-centered healthcare approaches.

Administrative Processes

Facilitating a U.S.-Cuba collaboration required navigating complex administrative processes, particularly concerning regulations and licenses for resource exchange. Current U.S. regulations permit scientific collaborations as a legitimate basis for exchanges between U.S. and Cuban nationals. However, initiating such collaborations involves considerable preparation, strategic communication, and compliance with legal requirements.

To advance the partnership, the team adopted a multi-faceted approach. Recognizing the importance of strong political and institutional backing, we engaged community leaders and local, state, and national government officials to garner support. This effort resulted in more than 40 letters from prominent members of Congress, Senators, and other representatives, all emphasizing the project's necessity and its potential to address health inequities in underserved U.S. communities. These letters were crucial in demonstrating the project's significance and advancing the administrative review process.

Additionally, we drafted a comprehensive operational plan, in close consultation with the Cuban Embassy, MINSAP, and MINREX, detailing the research partnership's proposed activities, timelines, and logistics. The plan covered essential elements such as visa management, travel and lodging arrangements, health insurance for Cuban researchers, communication strategies, and transportation. It also outlined potential benefits, including visiting professorships, co-authorship opportunities, and the co-development of future grants.

A pivotal aspect of the operational plan addressed obtaining necessary licenses from the U.S. Office of Foreign Assets Control (OFAC) to allow resource exchange with Cuba. Initially, U.S. regulations required submitting license applications for projects involving financial transactions with Cuba. The team launched a political strategy to overcome this hurdle, elevating the project to national attention. This advocacy effort underscored the partnership as a model example of reciprocal collaboration, showcasing Cuba's strengths in primary healthcare delivery and its potential to improve health outcomes in the U.S. These efforts culminated in a significant regulatory amendment on October 17, 2016 when OFAC exempted medical research projects like ours from the requirement to submit license applications for resource exchange. This milestone validated the bilateral nature of the partnership and underscored its importance. The regulatory change and widespread political support signaled a broader shift toward acknowledging the value of U.S.-Cuba collaborations in addressing global health challenges.

In close consultation with the Ambassador to Cuba in the U.S. at the time, Dr. José Ramón Cabañas, and the Ambassador to the U.S. in Cuba, Jeffrey DeLaurentis, we developed and submitted the necessary proposals to OFAC and coordinated with the Cuban Embassy to gain approval from MINSAP and MINREX. These steps legitimized the collaboration, paving the way for implementing innovative strategies based on Cuba's successful community-centered healthcare model. This rigorous and collaborative administrative process laid the foundation for a partnership built on mutual respect, shared goals, and the potential for transformative impact on maternal and child health inequities.

Project Goals and Objectives

This project aimed to establish a formal, bilateral medical research partnership between UIC and MINSAP to conduct a comprehensive evaluation using the Cuban HSA framework in Chicago's underserved neighborhoods, with Englewood as the pilot site. We also sought to co-develop an implementation plan for scaling effective

Cuban health strategies within the U.S. healthcare landscape, adapting Cuban models of MCH to the local context to address specific community health challenges (Kim *et al*., 2019) We hoped that this initiative could serve as a crucial step in advancing cross-cultural health research and offer a model for leveraging international expertise to meet the health needs of structurally underserved communities like Englewood that experience high levels of health inequities.

Phases

We used a tri-phase approach: *Phase 1 (Figure 1), Relationship Building and Cultural Immersion,* ran from March 2016 to June 2016. During this time, we established an officially recognized relationship between UICCC and MINSAP, with active collaboration fostering a bilateral exchange of best practices for addressing MCH inequities. This phase emphasized cultural immersion, allowing UICCC stakeholders to gain firsthand insights into the Cuban context, healthcare system, and outcomes. *Phase 2 (Figure 2), Reciprocal Visits,* which ran from August 2016 to January 2017, brought a Cuban delegation to Englewood. Cuban healthcare professionals gained practical experience in Chicago's community healthcare settings, such as the FQHC. Finally, *Phase 3 (Figure 3), HSA Implementation*, from August 2017 to December 2017, consisted of conducting a modified HSA as a cross-national team. This allowed us to gain experience adapting and assessing the impact of Cuban MCH practices, such as the HSA, to the needs and contexts of structurally underserved communities in the U.S. to improve IMRs and other essential health outcomes.

Figure 1: Visit to Policlínico 26 de julio in Habana during Phase 1

Figure 2: Image of Senator Dick Durbin of Illinois with initial Cuban Delegation visit during Phase 2. L to R, Dr. Robert A. Winn (UICCC Director), Dr. Carlos Calvis Cabrera, Dr. Sonia Maria Gonzalez Vega, Dr. Katherine Y. Tossas, Senator Dick Durbin, Dr. Robert Barish (UIC Sr Vice Chancellor), Dr. José Armando Arronte Villamarín)

Figure 3 L to R – Cuban epidemiologist Dr. Berta Bello Rodríguez and Cuban Community Nurse Nemesis Perez Martinez join Dr. Carla Pinto (UICCC research team) during a Phase 3 home interview conducted in Englewood, Chicago, IL, as part of the Health Situation Analysis.

Relationship Building and Reciprocal Visits

To ensure a robust and effective collaboration, the project began with a series of relationship-building activities, including monthly video and conference calls to foster open communication and collaborative planning. These calls served as a platform for project coordination, sharing insights, and aligning goals and expectations. The UIC team undertook an in-depth study of the Cuban healthcare system using resources such as the *Anuario Estadístico de Salud de Cuba*, a comprehensive annual statistical publication detailing health indicators by age, gender, and province, which provided critical context for understanding Cuban health practices and their application to underserved communities (Ministerio de Salud Pública de Cuba, 2024). Additionally, MINSAP and other peer-reviewed research recommendations helped guide the planning process. To enhance MINSAP's understanding of the U.S. context, the UIC team shared relevant data and insights on U.S. healthcare systems and the unique challenges faced by the Englewood community.

Englewood residents were actively engaged in this phase through focus groups and community town halls, ensuring their voices and needs were central to the project. In August 2016, the UIC team traveled to Cuba for a week-long visit, which included tours of Havana polyclinics, in-depth discussions with Cuban health officials, and participation in community-based health assessment activities. These visits exposed the Cuban healthcare system firsthand, including its preventive care practices and community-based health assessment methodologies.

Parallel to these efforts, the UIC team continued the complex process of securing visas for the MINSAP team to visit Chicago. This process involved navigating U.S. OFAC regulations, leveraging support from prominent political figures, and collaborating with the Cuban Embassy in Washington, D.C., and the U.S. Embassy in Havana. Ambassador Jeffrey DeLaurentis and Deputy Coordinator for Cuban Affairs, Mr. Mark Wells, were instrumental in expediting the approval process.

In January 2017, a historic exchange occurred as a MINSAP delegation visited the UIC campus, various community health centers, and Englewood neighborhoods for the first time. This initial visit was followed by a second MINSAP delegation visit from August to December 2017, during which the team participated in a four-month immersion period. The MINSAP team engaged in various research activities, including conducting comprehensive qualitative interviews in the homes of women of reproductive age who agreed to participate in the study. These interviews aimed to identify factors that participants associated with infant mortality and maternal and child health in their community. Additionally, the MINSAP team learned about clinic data systems to assess patterns and opportunities for improving health outcomes and participated in collaborative discussions with FQHC staff to better understand underserved populations' operational and systemic challenges. This immersive approach ensured that the delegation gained an in-depth understanding of the community's needs, fostering a stronger foundation for developing tailored interventions collaboratively. The delegation also met with community members for ground-truthing and to better understand local health needs and cultural dynamics.

Throughout their stay, the MINSAP team resided in Chicago, ensuring a deep immersion in the health realities of Englewood. They collaborated closely with FQHC staff, including participating in interdisciplinary team meetings, observing clinic workflows, and co-developing tailored health interventions. These reciprocal visits and immersive activities established a strong, mutually beneficial partnership. They highlighted the potential for cross-cultural learning to address health inequities in structurally underserved communities.

Adapting HSA Methodology to Conduct an Adapted HSA in Englewood

As detailed below, the MINSAP and UIC teams collaborated to design and implement an adapted version of the Health Situation Analysis (HSA) in Englewood. Using the Cuban HSA framework, the project integrated primary and secondary data sources to comprehensively understand the health and social drivers impacting the Englewood community.

Setting and Population

To address the community-identified priority of high infant mortality, the HSA focused on women and individuals assigned female at birth, aged 18-49, residing in Englewood, Chicago. Recruitment efforts were multifaceted, leveraging clinic referrals, community outreach, and digital platforms. Eligible participants were invited to participate in interviews, home visits, and surveys. These invitations were extended through FQHC clinicians, flyers, and social media campaigns, ensuring diverse and inclusive engagement across the community. Institutional Review Board (IRB) approval was obtained through UIC's IRB, and all participants provided informed consent before participating in the study.

Data Collection and Analysis

Qualitative and quantitative data collection methods were employed to comprehensively assess Englewood's health and social drivers. Individual interviews were conducted to gather insights into the social determinants of health, healthcare needs and experiences, community priorities, and perceptions of maternal and child health. The study team, comprised of graduate students and staff, was co-trained by UICCC and the Cuban delegation. This interdisciplinary team ensured culturally sensitive and methodologically rigorous data collection using a collaboratively developed structured interview guide.

In-person paper-based surveys complemented the interviews, capturing additional perspectives from the study population. Quantitative, community-level data were reviewed to evaluate key health metrics, such as prenatal care utilization rates. This collaborative review between UIC and MINSAP provided a dual lens of expertise and local context.

Data were securely stored and analyzed using REDCap for qualitative data management and Stata 15 for quantitative assessments. The analysis integrated qualitative synthesis of community insights with quantitative evaluations of sociodemographic and health indicators, resulting in a nuanced understanding of Englewood's health landscape and its drivers.

Health Situation Analysis (HSA) findings were presented during community forums to validate results and foster engagement. These forums served as a platform for member checking, ensuring that the findings accurately reflected community experiences and perspectives while promoting transparency and collaboration.

Key Activities and Stakeholders

The collaboration engaged a wide range of stakeholders, including the Infant Welfare Society (IWS), Mile Square Health Centers (MSHC), the Illinois Medical District (IMD), and various political entities such as the Congressional Black Caucus and Illinois political leaders. Each partner contributed unique expertise, facilitating the planning and operationalization of this international partnership.

Summary of Partnership Development Process

This manuscript focuses on the outcomes of the UIC-MINSAP partnership development process rather than the specific results of the Health Situation Analysis (HSA). Findings from the HSA, including community-level insights and health data, will be published in a subsequent manuscript. Here, we highlight the significant milestones, successes, and challenges of establishing this historic collaboration and the lessons learned from this cross-national, academic-governmental partnership.

The development of the UIC-MINSAP partnership required a strategic, phased approach. Initial efforts focused on relationship-building, cross-cultural immersion, and establishing shared goals. The partnership was formally launched in 2016, supported by grant funding from the W.K. Kellogg Foundation. The initial planning phase engaged multiple stakeholders, including community organizations, healthcare providers, academic institutions, and government entities, to align priorities and strategies for addressing maternal and child health (MCH) inequities in Englewood.

From the outset, UIC leadership prioritized cultural concordance and sustained relationship-building as core principles. The UIC team leveraged existing relationships with MINSAP officials, developed during a 2015 visit to Cuba, to emphasize the mutual educational nature of the collaboration. The partnership was grounded in a shared commitment to improving MCH outcomes and adapting Cuban health strategies to the U.S. context, focusing on addressing the community-identified priority of reducing infant mortality in Englewood.

To operationalize the partnership, the UIC team worked closely with U.S. and Cuban governmental agencies, including the Cuban Embassy in Washington, D.C., and the Office of Foreign Assets Control (OFAC). Advocacy efforts included securing over 40 letters of support from local, state, and national policymakers to demonstrate the project's significance and garner regulatory approval for the MINSAP delegation's visit. These efforts led to a critical regulatory amendment by OFAC, which exempted joint medical research projects with Cuba from licensure requirements, facilitating the exchange of resources between U.S. and Cuban partners.

Cross-Cultural Immersion and Exchange

A key partnership element was the cultural exchange between UIC and MINSAP teams. UIC team members visited Havana Polyclinics to observe Cuba's integrated, prevention-focused healthcare system. These visits underscored the effectiveness of community-based health assessments and the importance of building strong relationships between healthcare providers and community members. These lessons informed the design of a pilot HSA in Englewood.

Conversely, MINSAP delegates participated in a four-month cultural immersion in Chicago from August to December 2017. During this period, they engaged in research activities, including structured interviews with Englewood residents to identify health challenges and community priorities. The delegation also collaborated with UIC researchers to analyze clinic data and assess systemic barriers to care. Through these exchanges, both teams gained valuable insights into each other's healthcare systems, fostering mutual respect and understanding.

Unexpected Diplomatic and Policy Impacts

The partnership had significant policy implications, demonstrating the potential of cross-national collaborations to influence broader regulatory frameworks. UIC's operational plan and advocacy efforts were instrumental in amending OFAC regulations and simplifying the process for U.S.-Cuba medical research collaborations. This regulatory change marked a milestone in U.S.-Cuban relations and highlighted the potential for bilateral partnerships to address public health disparities.

Challenges and Lessons Learned

Developing the UIC-MINSAP partnership involved navigating numerous challenges, including administrative and cultural differences. Securing visas and managing financial logistics for the MINSAP delegation required navigating complex regulatory processes, often exacerbated by the embargo. Additionally, the Cuban delegation's adjustment to U.S. cultural and environmental contexts, including safety concerns and transportation challenges, highlighted the need for robust support systems during cross-cultural exchanges.

Cultural differences also influenced working styles. While the MINSAP team was accustomed to structured environments and standardized protocols, U.S. healthcare's fragmented and market-driven nature posed unique challenges. Effective communication and mutual patience were essential in bridging these differences.

One notable contrast was the approach to patient privacy. The U.S. system prioritizes individual privacy under regulations such as HIPAA, while Cuba's healthcare model emphasizes collective health management, often involving family and community members in care decisions. This cultural difference required adjustments from the Cuban delegation and highlighted the challenges of adapting health strategies across systems with divergent values.

Conclusions

This paper highlights a groundbreaking collaboration between a U.S. academic institution, the University of Illinois Cancer Center (UICCC), and Cuba's Ministry of Public Health (MINSAP). The partnership leveraged insights from Cuban healthcare practices to address maternal and child health (MCH) inequities, including high infant mortality rates, in Englewood—a predominantly Black Chicago neighborhood experiencing systemic poverty and resource scarcity. Working together, the UICCC and MINSAP teams adapted and implemented a modified version of Cuba's Health Situation Analysis (HSA). The HSA has been instrumental in Cuba's success at reducing infant mortality to near biological minimums, and its adaptation in Englewood provided critical insights into the drivers of health inequities in the U.S. context.

This paper focused on the results of the partnership development process rather than the specific findings of the HSA itself, which will be detailed in a forthcoming publication. The significance of this collaboration lies in its potential to offer a scalable model for addressing health disparities in resource-constrained communities by fostering transnational cooperation.

Partnership Process and Insights

The partnership demonstrated the potential for identifying and addressing structural inequities through Cuban-style approaches emphasizing prevention, equity, and community engagement. For example, Cuba's healthcare system has long prioritized social drivers of health, integrating low-tech, high-touch strategies to build trust and strengthen relationships between healthcare providers and communities. (Keck & Reed, 2012) This approach informed the design of Englewood's HSA, where community engagement was central to identifying actionable solutions.

Challenges in Adapting Cuban Practices to the U.S. Context

Adapting Cuban healthcare practices to the U.S. required significant effort and innovation. Navigating regulatory hurdles required extensive advocacy and administrative work to secure approvals for resource exchanges and facilitate the MINSAP delegation's travel to Chicago. This included engaging with the U.S. Office of Foreign Assets Control (OFAC), which ultimately amended its regulations to exempt joint medical research projects with Cuba from licensure requirements. While this regulatory change was a major milestone, other challenges persisted, such as managing financial logistics for the Cuban delegation and addressing cultural differences in healthcare approaches.

Cultural contrasts also posed challenges. Cuban delegates, accustomed to working in structured environments with standardized protocols, had to adapt to the U.S.'s fragmented, market-driven healthcare system. Moreover, the U.S. emphasis on individual privacy, exemplified by HIPAA regulations, diverged from Cuba's collective approach to healthcare, where family and community members are often directly involved in patient care decisions. These differences required ongoing communication, patience, and mutual learning.

The collaboration fostered trust, respect, and mutual understanding despite these challenges. The Cuban delegation's four-month immersion in Englewood allowed them to engage deeply with the community, conducting in-home interviews with women of reproductive age to understand local health challenges and priorities. Their observations highlighted the importance of addressing social isolation and building community capacity to improve MCH outcomes.

Lessons Learned and Future Implications

This partnership underscored the value of cross-national collaboration in addressing health inequities in underserved communities. The Cuban delegation's recommendations for Englewood emphasized the need for comprehensive health assessments, coordinated care systems, and community-driven health education initiatives. These strategies reflect Cuba's proven success in reducing health disparities and offer valuable insights for adapting similar approaches in the U.S. (Gorry, 2019; Huish & Kirk, 2007)

The collaboration also demonstrated the potential for U.S.-Cuba partnerships to catalyze systemic change beyond healthcare delivery. By highlighting the structural drivers of health inequities, this partnership called attention to the need for broader policy interventions addressing environmental justice, food security, and economic opportunity. The process also revealed the potential for integrating Cuban innovations —such as the dispensarización risk stratification system—into U.S. healthcare practices to improve equity and outcomes.

Our experience leads us to strongly recommend that other U.S. researchers partner with Cuba to address their communities' most pressing health priorities. Such partnerships are in line with Cuba's demonstrated commitment to advancing global health and providing medical disaster relief especially if one considers, as we do, U.S. health inequities as preventable disasters. We recognize that shifts in the U.S. political environment post-Obama may pose additional challenges to scientific collaboration. However, our partnership was facilitated by changes to OFAC regulations to exempt scientific collaborations from obtaining licensure to exchange funds. These regulatory changes are still in place and may ease some logistical challenges. Other U.S. researchers desiring collaboration with Cuba are advised to enlist widespread support, citing the value and breadth of Cuban health innovation (Lage, 2019).

Cuba-U.S. scientific partnerships hold the potential to greatly enhance U.S. access to innovative Cuban technologies, including treatments to prevent diabetic foot ulcers—a leading cause of amputation and disability—and vaccines targeting lung cancer (World Health Organization, 2015). Current collaborations between the two nations highlight this potential. For example, Cuba's Molecular Immunology Center and Roswell Park Cancer Institute in Buffalo, New York, are advancing a groundbreaking Phase I clinical trial for a vaccine against non-small cell lung cancer (Crombet Ramos et al., 2015). Cuban marine scientists have partnered with NOAA oceanographers and fisheries biologists to study Atlantic bluefin tuna (National Oceanic and Atmospheric Administration, 2016). Most recently, the U.S. Food and Drug Administration (FDA) approved Discovery Therapeutics Caribe Company's move forward with a Phase III clinical trial of Heberprot-P for diabetic foot ulcers, set to begin by the end of 2024 (Mas-Bermejo, Marimón-Torres, & Dickinson-Meneses, 2024). These partnerships, like ours, exemplify the transformative potential of Cuban expertise to address critical health disparities in the U.S. and beyond.

The UICCC-MINSAP partnership represents a pioneering model for leveraging international expertise to address health inequities in underserved U.S. communities. While the process was not without challenges, the collaboration demonstrated the transformative potential of transnational partnerships in advancing health equity. This work serves as a call to action for researchers, policymakers, and healthcare providers to explore similar collaborations, recognizing that solutions to the U.S.'s health inequities may lie beyond our borders. As this paper focuses on the partnership development process, the results of the HSA and its implications for Englewood will be detailed in a forthcoming publication. This partnership exemplifies the possibilities of mutual learning and cooperation in pursuing health equity.

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Appendix B. Data Sources and Definitions for Table 1

Data Sources by indicator and by locality	Englewood	Chicago	Illinois	US	Cuba
Infant Mortality Rate (per 1,000 live births)	https://chicagohealthatlas.org/indicators/VRIMR?topic=infant-mortality-rate	https://dph.illinois.gov/content/dam/soi/en/web/idph/publications/idph/topics-and-services/life-stages-populations/maternal-child-family-health-services/maternal-health/perinatal-health/infant-mortality-data-report-2024.pdf	The number of infant deaths per 1,000 live births https://www.cdc.gov/maternal-infant-health/infant-mortality/index.html#cdc_data_surveillance_section_2-infant-mortality-rates-by-state-2022		https://nnoc.org/cuba-reduces-infant-mortality-rate-to-4-3-in-2016/
Unemployment Rate	In Labor Force: Unemployed* (Population 16 years and older) http://www.cmap.illinois.gov/documents/10180/126764/Englewood.pdf		ACS 2022		https://www.macrotrends.net/global-metrics/countries/CUB/cuba/unemployment-rate#google_vignette
Less than High School Education	Less than High School Diploma (Population 25 years and older) http://www.cmap.illinois.gov/documents/10180/126764/Englewood.pdf				illiteracy = 0.2% https://world-education-blog.org/2020/12/18/education-of-students-with-disabilities-in-cuba/
Percentage of People Living Below the Poverty Line	Percent of residents in families that are in poverty (below the Federal Poverty Level) https://chicagohealthatlas.org/indicators/POV?topic=poverty-rate	Percent of residents in families that are in poverty (below the Federal Poverty Level) https://chicagohealthatlas.org/indicators/POV?topic=poverty-rate	ACS 2022		Almost 90% of the Cuban population lives in 'extreme poverty' according to new study https://english.elpais.com/international/2024-07-29/almost-90-of-the-cuban-population-lives-in-extreme-poverty-according-to-new-study.html

Data Sources by indicator and by locality	Englewood	Chicago	Illinois	US	Cuba
Median Income	Median income: Household Income, 2018-2022 http://www.cmap.illinois.gov/documents/10180/126764/Englewood.pdf	http://www.cmap.illinois.gov/documents/10180/126764/Englewood.pdf	ACS 2022		Their median household income ranges from about $300 to $400 per year, and they struggle to meet their basic needs. https://www.bcg.com/publications/2016/globalization-consumer-products-understanding-evolving-cuban-consumer#:~:text=People%20in%20this%20group%20represent,to%20meet%20their%20basic%20needs.
Percentage of Pregnant People Initiating Prenatal Care in First Trimester	Average annual births and percent of births with prenatal care initiated in the first trimester by community area of residence of https://www.chicago.gov/content/dam/city/depts/cdph/statistics_and_reports/BirthsinChicago1999thru2009Dec172012.pdf	https://www.marchofdimes.org/peristats/data?reg=99&top=5&stop=34&lev=1&slev=4&obj=18&sreg=17	In Illinois in 2023, 76.7% of live births were to women receiving early prenatal care	Prenatal care beginning in the first trimester https://www.cdc.gov/nchs/data/nvsr/nvsr73/nvsr73-02.pdf (National Center for Health Statistics. (2024). National Vital Statistics System, natality data file. National Vital Statistics Reports, 73(2).)	https://journals.lww.com/stdjournal/citation/2016/12000/cuba_validated_as_the_first_country_to_eliminate.3.aspx

Data Sources by indicator and by locality	Englewood	Chicago	Illinois	US	Cuba
Percentage of Residents Who Are Black / African-American / Afro-Cuban	http://www.cmap.illinois.gov/documents/10180/126764/Englewood.pdf	http://www.cmap.illinois.gov/documents/10180/126764/Englewood.pdf		2022 ACS	Black 9.3% (2012 est.) https://en.wikipedia.org/wiki/Demographics_of_Cuba