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Kamea Duncan

Monitoring and Evaluation to Advance Health Equity Programs at Emory University Urban
Health Initiative: A Special Studies Project

By

Kamea Cyril Duncan
MPH

Hubert Department of Global Health

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Amy Webb Girard, PhD
Committee Chair

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Kamea Cyril Duncan
Bachelor of Science
Miami University
2020

Thesis Committee Chair: Amy Webb Girard, PhD

An abstract of
A thesis submitted to the Faculty of the
Rollins School of Public Health of Emory University
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Abstract

Monitoring and Evaluation to Advance Health Equity Programs at Emory University Urban
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Introduction: Emory University Urban Health Initiative (UHI) was founded in 2011 to use
unique health education, advocacy, and collaborations to address the interdisciplinary health
issues and disparities experienced by urban residents in the Metropolitan Atlanta area. Out of the
15 programs currently hosted by UHI, this thesis focuses on Health Careers Collaborative
(HCC), Walk with a Doc (WWaD), and COVID-19 Data Monitoring (CDM).

Purpose: Overall, these programs play a role in health education and promotion that has the
potential to detect, mitigate and eliminate poor health outcomes stemming from non-
communicable and communicable diseases and disparities in education, socioeconomic status,
and healthcare. The goal of this M&E Plan is to develop, monitor, and evaluate a plan to make
the HCC, WWaD, and CDM health equity programs at UHI, more efficient and impactful for
predominantly low-resourced and minority communities in Atlanta, Georgia by June 2023. This
evaluation plan will facilitate the assessment of program activities at UHI to ensure they
are being implemented as intended and producing anticipated outputs and outcomes.

Methods: A Theory of Change (ToC) was developed for each program to describe and visually
display how a program's inputs, activities, outputs, and outcomes, are supposed to deliver the
desired results. This was portrayed in a logic model and further explained using a logical
framework. The logical frameworks and detailed-oriented indicators can be used to measure and
track the progress of each program toward the program's goal.

Discussion: UHI is currently exemplifying it's mission statement with innovative programming
and constructive collaborations, yet could benefit from enhancing their capacities, recruitment
strategies, and activity implementation. Once limitations are addressed, various
recommendations are applied, and the newly developed comprehensive M&E plan is
implemented, the UHI will be able to advance their mission and measure the progress toward
outcomes in their target communities.

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Abbreviations:

APE: Applied Practicum Experience
BSHES: Behavioral Social and Health Education Sciences
CBSPHE: Committee on Community-Based Solution to Promote Health Equity
CDC: Center for Disease Control and Prevention
CDM: COVID-19 Data Monitoring
HCC: Health Careers Collaborative
IOM: Institute of Medicine
NASEM: National Academies of Sciences, Engineering, and Medicine
SDOH: Social Determinants of Health
STEM: Science, Technology, Engineering, Math
ToC: Theory of Change
UHI: Urban Health Initiative
WWaD: Walk with a Doc

Chapter 1: Introduction

1.1. Background of Emory University's Urban Health Initiative

Emory University Urban Health Initiative (UHI) was founded in 2011 to use unique health resources to address the interdisciplinary health issues and disparities experienced by urban residents. It is locally based in the Metropolitan Atlanta area with the five target areas being Clarkston, East Lake, Edgewood, Northwest Atlanta, and NPU-V/Pittsburgh Mechanicsville. The mission is "to provide health disparities education and advocacy, build collaborative partnerships, and develop best practice models with low-wealth communities and those who work with them to advance equity in health and well-being" (UHI, n.d.). UHI currently hosts 15 ongoing programs that exemplify this mission so they can one day fulfill their vision to eliminate health disparities and social determinants of health inequities through community collaboration. The UHI values accountability, equity, inclusiveness, and leadership. They strive to listen and learn from diverse, predominantly vulnerable communities by using research to address community-led needs, eliminate systemic root causes, and promote health equity. Their key objectives are education, community engagement, and research which they aim to achieve through their key strategies. Some of their key strategies include clinical and community services, interprofessional training, population health and evaluation, community-engaged research, community outreach, and engagement with residents of low-resourced communities.

The organization functions due to the efficient work of many personnel. The distinguished leadership structure consists of one Director, two Co-Directors, three Assistant Directors, three Faculty Advisors, several Fellows, and an Administrative Team. Their

partnerships vary depending on the project but span throughout Atlanta including the healthcare, welfare, and food procurement sectors.

1.2. History of the programs

Out of the 15 programs currently hosted by UHI, this thesis focuses on three of them. The three ongoing programs include Health Careers Collaborative (HCC), Walk with a Doc (WWaD), and COVID-19 Data Monitoring (CDM). The HCC is a local chapter and subset of the Health Career Collaborative, a national initiative. The Atlanta chapter was established in 2014 with specific school partnerships integrated in 2018. Both local and national programs strive to provide underrepresented minority students with mentorship, exposure to a diverse range of health-related careers, and an engaging, project-based learning health and science curriculum. The HCC aims to encourage students to graduate from high school and pursue post-secondary science, engineering, technology, or math (STEM) education, eventually fortifying the pipeline of under-represented healthcare providers who exemplify cultural humility.

The WWaD was originally established by a cardiologist in Columbus, Ohio in 2005. The program became replicable in other cities in 2009 when the Atlanta branch was formed. This FREE health professional-led walking program encourages physical activity while simultaneously disseminating health education and cultivating inter-communal relationships. Equitable health education can serve as preventative and lifestyle medicine. WWaD humanizes doctors and allows them to be more accessible as they literally and figuratively walk beside their patients on their journey to better health (WWaD, n.d.). The program enhances physical, mental, social, and environmental health and well-being. This program is currently thriving with over 600 chapters in 47 states and 44 countries.

In 2020, the novel coronavirus sars-cov-2 (COVID-19) quickly spread throughout the United States, disproportionately affecting minority communities. The CDM program was established in 2020 to address the COVID-19 pandemic by providing in-person vaccine education, increasing vaccine uptake, eliminating COVID-19 cases, and monitoring COVID-19 data collection. Through the CDM program, the UHI has supplied schools and faith-based organizations with funds for incentives and health education information.

1.3. Target Population and Beneficiaries

The UHI prioritizes its efforts on vulnerable populations of low-resourced and underserved communities. The specific context varies across these three programs. For instance, the HCC aims to empower underrepresented minority students at Title I high schools with a high percentage of students living in poverty. These teenagers attend one of the four Title I high schools that the UHI collaborates within the Atlanta area: Redan High School, Benjamin E. Mays High School, Maynard H. Jackson High School, and Clarkston High School. The WWaD program, although open to the broader community, seems to attract mainly African American women in Atlanta. Nationally, according to the Limetree Research study, WWaD participants were 76% female, and over half of the walkers (60.4%) were 60 years or older (Horton, K., & Loyo, J., n.d.). Health professionals also benefit from both the HCC and WWaD programs when they engage with and learn from underserved communities. These skills will be transferable to their careers when advocating or providing for similar populations in the future. The CDM benefits the minority communities that were adversely and inequitably impacted by the pandemic. These included primarily African American and Latino communities in Manning, South Carolina, Atlanta, Georgia, and Tuskegee, Alabama.

1.4. Key stakeholders

The UHI engages with many stakeholders across various levels of academia, healthcare, and community organizations.

In addition to the four high schools involved, the HCC program is sustained by the efforts of health-related field volunteers from Spelman, Morehouse, and Emory University School of Medicine, Rollins School of Public Health, Nell Hodgson Woodruff School of Nursing, and the Physician Assistant Program. Other partners that provide support and resources include Children's Healthcare of Atlanta, Strong4Life Program, Grady Hospital, and Emory Healthcare. Nationally, HCC is sustained through the extension of the American College of Surgeons and receives fiduciary support from Aetna Health Insurance and Main Line Health.

There are more than 13 WWaD programs throughout Atlanta and its suburbs. The local UHI WWaD program currently partners with Grady Hospital and Emory University School of Medicine to recruit for their weekly event leaders and speakers. Nationally, the WWaD program is funded by a Texas Medical Association Foundation grant, with major support from Texas Medical Association Insurance Trust, Prudential, and other healthcare sponsors. Additionally, Limetree Research was contracted to perform a comprehensive evaluability assessment where they were able to log participant demographics and generate mixed-method data results (Horton, K., & Loyo, J., n.d.).

The CDM program is supported by many local faith-based organizations and schools in the neighboring communities. These organizations and schools collaborate with UHI to host and disseminate COVID-19 educational materials. Likewise, one of UHI's very own, Dr. Hope Bussenius, created an app that can assist with COVID data monitoring and collection.

Chapter 2: Literature Review

2.1. Health Disparities & Health Inequities

Health disparities are defined as *"differences or gaps in health outcomes and their determinants between portions of the population, consisting of social, demographic, environmental, and geographic attributes"* (Truman et al., 2011). Whereas health equity is defined by the Center for Disease Control and Prevention (CDC) as *"the achievement of every person having the opportunity to attain their optimal health potential and is absent of disadvantaged persons achieving this potential due to socially determined circumstances"* (CDC, 2015). Health inequities occur when not every person has a fair opportunity to attain their optimal health (CDC, 2015). Health inequities are reflected in differences in length of life that can be measured or displayed in the quality of life; rates of disease, disability, and death; severity of disease; and access to treatment (CDC, 2015).

There are many well-documented pieces of literature that have brought awareness to health disparities and inequities domestically and globally. In 1985 a report published by the US Department of Health and Human Services (HHS), the Secretary's Task Force Report on Black and Minority Health, sparked nationwide concern after it revealed profound racial and ethnic differences that were prevalent in health outcomes (Penman-Aguilar et al., 2018). In 1992 a world-renowned paper by Margaret Whitehead initiated international urgency for governments and all sectors of society to address the differences in health which is found to be associated with one's relative advantage/disadvantage in social hierarchies (Penman-Aguilar et al., 2018). Over a decade later, a study was conducted by the Institute of Medicine (IOM) at the request of Congress. Their report titled *Unequal Treatment: Confronting Racial and Ethnic Disparities in*

Healthcare revealed racial and ethnic inequities in health care. No matter which country you live in, the World Health Organization's 2008 Commission on Social Determinants of Health report uncovered there are drastic differences in the chance at life (Penman-Aguilar et al., 2018). Penman-Aguilar and their colleagues noted even countries that are considered developed and rich still accrue these challenges. Other advancements include the National Academies of Sciences, Engineering, and Medicine (NASEM) referring to the CDC Community Health Improvement Tracker as a one-stop-shop for collaborative health intervention approaches to improve community health (NASEM, 2017). Accurate and useful information has been drawn from these various sources and others to address health disparities and inequities.

The National Academies of Sciences, Engineering, and Medicine (NASEM) note that not only does the presence of health inequities have life-threatening consequences for individuals, but they also jeopardize the economic stability, business viability, and national security of the United States. This includes thorough direct patient costs and insurance coverage. A 2009 investigation discovered that 2003-2006 direct medical care expenditures could have been reduced by $229.4 billion, and indirect costs for premature mortality and morbidity by over $1 trillion if health disparities were eliminated (LaVeist et al., 2009, p. 4). As for insurance companies, the Urban Institute hypothesized they would spend approximately $337 billion total on racial health disparities over a nine-year span (Waidmann, 2009). After evaluation, the NASEM Committee on Community-Based Solution to Promote Health Equity in the United States (CBSPHE) proposes that high morbidity puts eligible workers out of commission, hindering their ability to work efficiently and productively. Therefore, these individuals are not able to invest money back into the economy. As a result, private businesses were especially hit hard (NASEM, 2017). Countries also suffer after a study found that 75% of young adults do not

meet the qualifications for the military due to health problems limiting the number of people able to defend America (Christeson et al., 2009).

2.2. Social Determinants of Health

Social determinants of health (SDOH) can include but are not limited to one's education (e.g., literacy, knowledge, capacities, etc.), physical environment (e.g., work, school, neighborhood, community, etc.), social environment (e.g., security, social capital, engagement, etc.), and financial status (e.g., income, wealth, etc.) (NASEM, 2017). The NASEM committee projects unequal allocation and distribution of these resources or forms of power contributed to complex inequity formation. For this review, SDOH includes education; employment; food security; financial status; health insurance distribution; housing; the physical environment; public safety; and the social environment (NASEM, 2017).

The CBSPHE committee describes structural inequities that determine one's health were assembled on the backbone of socially constructed identities like sexual orientation, gender, and race. They are portrayed and commonly seen through various "isms" and phobias like racism, sexism, xenophobia, and homophobia (NASEM, 2017).

Understanding SDOH requires a "big picture" framework. The NASEM cited it is useless to solely address individual behaviors without considering the larger context (NASEM, 2017). Essentially, they found policies and the structural system construct the context in which people inhabit, hence influencing their individual choices. This can manifest within each level of the social-ecological model as seen in **Figure 1.** (NASEM, 2017). These factors are described by the committee to be fluid, meaning they can be interdisciplinary and can occur simultaneously.

Systemic Level
- Immigration policies
- Incarceration policies
- Predatory banking

Community Level
- Differential resource allocation
- Racially or class segregated schools

Institutional Level
- Hiring and promotion practices
- Under- or over-valuation of contributions

Interpersonal Level
- Overt discrimination
- Implicit bias

Intrapersonal Level
- Internalized racism
- Stereotype threat
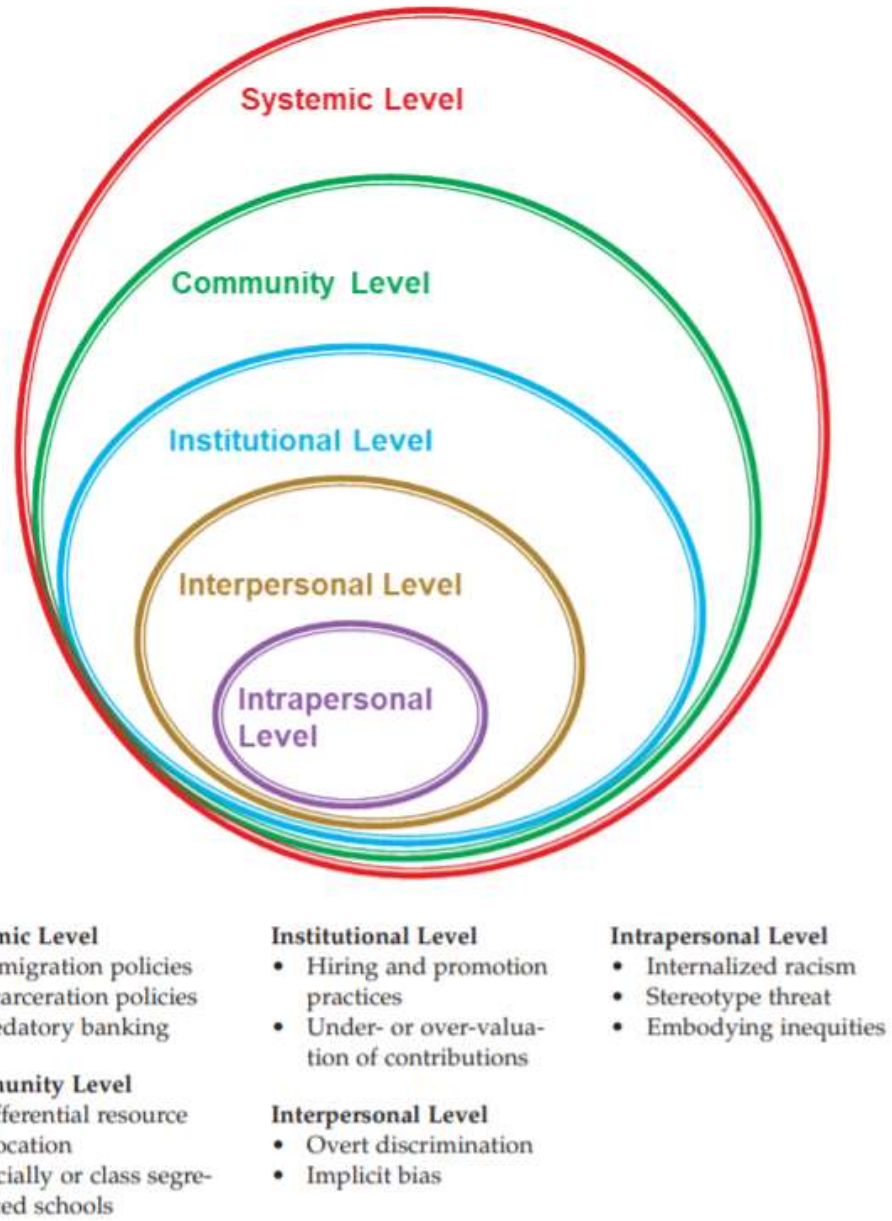- Embodying inequities

Figure 1. The socio-ecological model and examples of factors that can socially determine one's health outcome at each level. SOURCE: Material concept from McLeroy et al., 1988, graphic from NASEM, 2017.

McLeroy and their colleagues as well as NASEM committee members agreed on the dissemination of levels. The intrapersonal level is comprised of knowledge, beliefs, and attitudes

that have been internalized due to external social influences. The interpersonal level consists of the people and experiences in one's social network. The institutional and community level includes relational and constructional factors among one's social affiliations and organizations. The systemic level refers to the local, state, national, and global regulations that determine a person's health outcomes (McLeroy et al., 1988) (NASEM, 2017).

2.3. Public Health Implications

Duly documented research by the committee and others portrays individual behaviors as a key factor in determining health outcomes but even though genetics, biology, and individual behaviors have a role in the presence of poor health outcomes, social, economic, and environmental factors have a greater consequential impact on these health outcomes and disparities (NASEM, 2017). Across all literature sources, both health disparities and health inequities are agreed to be systematic, unfair, and preventable. Eliminating health inequities is ethically imperative and is aligned with previously established principles of human rights (Penman-Aguilar et al., 2018). No matter which part of the spectrum one falls on, the historic and continuous reciprocal relationship between structures, norms, policies, and demographic/geographic patterns has determined the life trajectory of individuals across the globe (NASEM, 2017).

Hahn et al. and colleagues found inequities in the educational system have proven to lead to long-term mortality and morbidity. Studies in 2005 found both men and women with a high school education had a higher life expectancy, men by 6.7 and women by 7.0 years, compared to those who did not receive a high school education (Hahn et al., 2015). A substantial amount of definitive evidence connects educational attainment to lifelong health outcomes via three

interdisciplinary pathways: (1) adoption of healthy behaviors; (2) problem-solving skills along with the ability to pursue and maintain productive work, adequate income, and the health benefits they provide; and (3) development of psychological and interpersonal strengths, for insistence having a sense of control and social support, which contributes to healthy social interactions (Hahn et al., 2015). The populations that suffer the most from this socially determined fate by virtue of low high school completion rates are low-income families and racial/ethnic minorities (Hahn et al., 2015). These results are reflected in and supported by several pieces of literature.

Socioeconomic status (SES), access to adequate employment, healthcare, housing, transportation, and exposure to safe environments are among a few community-wide and nationwide factors that can mold a person's health (NASEM, 2017). The CBSPHE committee offers the example of access to monetary resources which can ensure one can live in a healthy environment and have quality health insurance. If a person is among the disadvantaged in any of these factors, they are yielding to an inequitable health outcome (NASEM, 2017). Our youth, the future of our nation, are the ones most likely to experience poverty especially if coming from a minority community or a lower socioeconomic class (Burd-Sharps and Lewis, 2015). As the population continues to grow and our nation becomes more diverse, this problem continues to evolve expeditiously (NASEM, 2017). The lack of access to quality early childhood education can be the onset of long-term chronic health challenges (NASEM, 2017). Likewise, the NASEM committee notes limited access to adequate healthcare can impact one's health fate and strain the healthcare system. The IOM determined inadequate health care coverage coupled with significant delay-in patient care could further complicate a health trajectory and exponentially

increase the cost of care. This could be because more individuals will be relying heavily on the limited healthcare system (IOM, 2009).

Racial bias, medical mistrust, and low health literacy are just some of the factors that have exacerbated the health disparities minorities face in this country as demonstrated in the NASEM committee review. Throughout the history of America, there have been numerous racial medical atrocities that have contributed to the onset and currently presented health disparities and curated a sense of medical mistrust in the Black community (Washington, 2010). Ivy League-educated author Harriet A. Washington explains how consistent medical experimentation and exploitation that contributed to many of today's medical advances were at the cost of black trauma (Washington, 2010).

Most recently medical mistrust, low health literacy and other factors that are socially determined have highlighted the health disparities minorities face in America when it comes to the burden of COVID-19 (Hardeman et al., 2021). As of February 2021, the COVID-19 pandemic has globally affected more than 106 million people, yet minorities have approximately a 5 times greater risk of adverse COVID-19 conditions related to social determinants of health that may consequently exacerbate patient comorbidities (Hardeman et al., 2021). The gap in health outcomes is present but continues to worsen for those already disadvantaged due to social factors like limited access to health care, low socioeconomic status, or race. Equitable vaccine distribution would not only eliminate vaccination disparities but also help mitigate this disproportionate effect in underserved communities (Hardeman et al., 2021). Readers are reminded that all these cases stem from structurally racist and unethical practices (NASEM, 2017).

2.4. Health Inequity Mitigation (programs, policies, or solutions)

There has been an increase in action and solution-oriented initiatives for addressing health inequities including incorporating health considerations into decision-making, policy areas, and community-level health interventions (Penman-Aguilar et al., 2018).

Doerschuk et al. found a successful program that aims to reach a similar target population of students from a low-income background, first-generation students, and/or underrepresented in STEM, including females, African Americans, Hispanics, Alaskan Natives, and Native Americans, recognized the following as the best practices to increase and broadening persistence in STEM: 1.) "K-14 exposure and recruitment to STEM; 2.) Peer/faculty mentoring and role models; 3.) peer tutoring and support; 4.) developing a sense of belonging to the institution and discipline; 5.) enriched undergraduate research experience; 6.) financial assistance for low-income students; 7.) continuous program evaluation."

Hurk et al. also documented other successful interventions having a STEM mentor to enhance student motivation and belonging in STEM, in addition to programs to raise awareness about the need for STEM education, and STEM-oriented summer camps (2019). These correlational study designs contained both malleable and non-malleable factors. Similar school programs found an increase in interest and enrollment in STEM education can be accomplished through programs that focus on knowledge, ability, motivation, and feelings of belonging (Hurk et al., 2019).

Previous successful COVID-19 vaccine distribution programs achieving maximum distribution have had a health equity task force or diversity strategies, communication strategies, monitoring techniques, and implementation measures (Hardeman et al., 2021). Hardeman et al. conducted a study to determine how each state planned to ensure there was equitable vaccine

distribution during the pandemic (2021). In this cross-sectional study, of the 51 COVID-19 vaccine distribution plans evaluated for each state, only 8 plans included minority group representation (Hardeman et al., 2021). Hardeman and his colleagues find this extremely concerning considering the pandemic has disproportionately impacted minority communities in terms of morbidity, mortality, and other factors.

A systematic review performed by Dicent-Taillepierre et al. concluded various elements that should be included in a program to ensure the target population has access to the resources that promote health equity and protect their health (2016). This includes clustered intervention approaches, comprehension of evidence to reduce health disparities, community engagement, sociodemographic characteristic consideration, multisectoral collaboration, and meticulous evaluation and plans. (Dicent-Taillepierre et al., 2016).

2.5. Importance of Monitoring and Evaluation

Penman-Aguilar et al. (2018) suggest the purpose of monitoring a program is to systematically track the continued progression and help identify when changes need to be made. Data must be routinely collected, accurately analyzed, and communicated in a way that all audiences on the health literacy spectrum can comprehend the data. They define the purpose of an evaluation as gathering an in-depth assessment of the program's performance at a specific point in time. According to the CDC Framework of Evaluation, "Effective program evaluation is a systematic way to improve and account for public health actions by involving procedures that are useful, feasible, ethical, and accurate" (CDC, 1999). Furthermore, monitoring focuses on the project's efficiency from an internal, management-driven perspective, whereas evaluation

focuses on the project's effectiveness from an external, stakeholder-driven perspective (Crawford & Bryce, 2003).

Monitoring and evaluation (M&E) can help effectively advance a program while ensuring accountability, quality improvement, efficiency, and impact (Penman-Aguilar et al, 2018). Penman-Aguilar et al. points out that this information is essential for all stakeholders who are directly or indirectly involved. M&E can be used to identify and document impactful approaches and the best use of resources (Penman-Aguilar et al, 2018). Therefore M&E can provide evidence for making recommendations, drawing conclusions, implementing evidence-based decisions, policymaking, and applying for additional grant funding or monetary support. M&E is essential in any facet of public health work. The varying data collected and analyzed from M&E efforts lead to different implementation strategies tailored to each program (CDC, 2015). Evaluating health equity programs can show if health inequities have decreased, increased, or remained the same compared to evaluating population-wide health programs which could just assess overall health status (CDC, 2015).

Monitoring is viewed by the committee as a prerequisite for policy recommendations and intervention implementation because what is not monitored or measured cannot be rectified. Characteristics of a group of people with more/less power and privilege or with higher/lower social position can aid in the identification of a target population. Penman-Aguilar et al. found coupled with thorough historic and contemporary research of their experiences through various means of verification sources (government reports, academic literature, and credible media reports), can shed light on health inequities varying between race/ethnicity, age, sex, sexual orientation, gender identity, SES (including educational level, income, wealth, and occupation), disability status, country of birth, and geographic location (Penman-Aguilar et al., 2018).

The Penman-Aguilar et al. article notes that according to Healthy People 2020 and 2030 one of the United States' overarching goals is to eliminate health disparities to achieve health equity and attain health literacy (Healthy People 2030), however, this cannot be accomplished without efficient M&E. To effectively assess progress towards this U.S. public health goal a timely and accurate assessment that benchmarks and monitors the magnitude and direction of change in health disparities and their determinants are needed (Penman-Aguilar et al., 2018). This is because monitored data on health disparities can serve as an indicator for the health status of a community (Truman et al., 2011). As portrayed in **Figure 1**., social and structural determinants of health can influence each level of the socioecological model and should be monitored (Penman-Aguilar et al., 2018). Penman-Aguilar et al. shared it is essential to consider each level and rationalize the level your research targets. Research studies have documented how to innovatively assess structural determinants of health that are shaped by the distribution of money, power, and resources at global, national, and local levels (Penman-Aguilar et al., 2018). Penman-Aguilar and their colleagues note previous research will also inform researchers that the most important determinants should be rigorously monitored. Even though determinants of health are monitored using traditional health systems, there have been notable reports of non-health data systems that Penman-Aguilar et al. cited. As research continues to evolve, the additional utilization of non-health data systems to monitor and evaluate determinants of health should be normalized (Penman-Aguilar et al., 2018).

Penman-Aguilar et al. also urged researchers to consider how measurement decisions can influence findings that determine the allocation of resources and policy recommendations. Penman-Aguilar et al. cited currently, approximately 90% of health inequity studies report include only relative inequity measurement which can mislead conclusions and interpretations of

the data. These misinterpretations could include if the inequities are increasing, decreasing, or staying the same over time, the effect interventions had on the inequities, and specific populations that have the largest inequities (Penman-Aguilar et al., 2018). To effectively track health inequity data should aim to report both relative and absolute measurements (King et al., 2012).

2.6. Known Gaps, Challenges, and Limitations

Many authors highlighted the current challenges and future opportunities of health equity here in the United States involving a lack of research variety, evaluation, funding, and clarity. Hurk et al.'s systematic review thoroughly documented the *malleable and non-malleable factors related to (gender differences in) enrolment and persistence in STEM education.* However, a limitation of this study is it did not look at the difference by race. This made much of the evaluation focus on dropout rates compared to the lack of initial access to these fields, problems other minority demographics might face. Expanding this research could provide more clarity and information needed to create an effective intervention. Yet when looking at some of these demographic factors some researchers discovered there could be challenges with relatively small sample sizes (Penman-Aguilar et al., 2018). Even though progress is being made by health organizations and agencies, there are some characteristics like race, sexual orientation, gender identity, and disability status that vary across national database systems (Penman-Aguilar et al., 2018).

Although health disparities and health inequities are present on a national level and have been researched, Penman-Aguilar et al. found there is still much more to learn and implement to truly advance health equity (Penman-Aguilar et al., 2018). Throughout the literature, many found

that low SES limits an individual's potential to reach optimal health by restricting access to health-preserving resources. On the other hand, SES measurement does not adequately account for health disparities based on race and ethnicity, sexual orientation, and gender identity (Williams, 2015 & National Academies of Sciences, Engineering, and Medicine, 2017).

It is well documented that the identification of what worked and did not work in the program had a conclusive result. Bringing awareness to health inequities was also found to be a definitive result. Authors believe this result should be challenged to be taken a step further using evaluation theories and frameworks. This should include measures of short-term long-term outcomes, and when data from a comparison group to further support conclusive results (Carline et al., 1998). Awareness is a start but conjoined with action is more result-oriented (NASEM, 2017). There needs to be more solution-based research on how to counter implicit bias and other deterrents to universal optimal health (NASEM, 2017). Likewise, NASEM found there needs to be more research regarding the existing consequences of historical trauma on health. There is also still a need for analytic data sets and research that will capture the multi-dimensional root causes and structural and contextual factors of health inequities that arise due to the immediate socially structured conditions in which people are born, grow, live, work, and how old they are (Penman-Aguilar et al., 2018).

According to CBSPHE committee members funding programs and finding people to participate in the research, programs can present challenges. Health equity programs can run into funding challenges because they cannot effectively produce evidence of program impact (NASEM, 2017). However, Carline et al. argued sufficient funding was necessary to design and complete reasonable evaluations (Carline et al, 1998). The NASEM research committee recommended funders further support research and academic research institutions committed to

mitigation and elimination of health/health care delivery disparities and implicit/explicit bias that marginalized populations face (NASEM, 2017). This will able the production of fact-proof and tested interventions.

Some research led to the false narrative that SDOH factors are unmodifiable however, this is not the case. SDOH factors can be persuaded through social, political, and economic policy intervention (NASEM, 2017). Health inequities can encompass a vast number of topics making potential programming to include each level challenging. Many of the SDOH including the socioeconomic gradient of health is well established in the United States and worldwide (Penman-Aguilar et al., 2018). Nearly all the health inequity challenges stem from the root cause of structural and systematic racism which is an extremely complex problem that has manifested for centuries (NASEM, 2017). Universal health equity would take sustainable societal efforts which unfortunately some are not willing to do (NASEM, 2017). This contributes to the long journey ahead of public health professionals striving to eliminate health inequities. Although progress is being made, it is slow (Penman-Aguilar et al., 2018). Nineteen years after Whitehead's paper, the CDC released its first of a kind CDC Health Disparities and Inequalities Report (Truman et al., 2011). Furthermore, current intensive and systematic health equity trainings are necessary for public health professionals of all levels and organizations (Penman-Aguilar et al., 2018). Previously established community-based health literacy programs reviewed by Lourdes Martinez from the CDC indicated health literacy issues might not be obvious to evaluators and other personnel (The National Academy of Science, 2018).

Subsequently, there is a need to provide efficient and impactful programs that focus on multiple levels of health equity for low-resourced and minority communities in Atlanta, Georgia. Overall, these programs play a role in health education and promotion that has the potential to

detect, mitigate and eliminate poor health outcomes stemming from non-communicable and communicable diseases and disparities in education, socioeconomic status, and healthcare. The goal of this M&E Plan is to develop, monitor, and evaluate a plan to make the HCC, WWaD, and CDM health equity programs at UHI, more efficient and impactful for predominantly low-resourced and minority communities in Atlanta, Georgia by June 2023. This evaluation plan will facilitate the assessment of program activities at UHI to ensure they are being implemented as intended and producing anticipated outputs and outcomes.

Chapter 3: Approach/ Methods/ Deliverables

3.1. Approach

There was an initial onboarding process including various introductory meetings, safety discussions, orientations, and written communications distributed and hosted by UHI. These were facilitated and attended by UHI members; Director, Charles E. Moore, MD, FAACE, Co-Director, Jada Cenata Bussey-Jones, MD, FACP, Co-Director, Amy Webb Girard, Ph.D. Associate Director, Carolyn B. Aidman, Ph.D., Assistant Director, Brittany Prince Evans, MHA. This was followed by an initial consultation and program overview meeting was held with Dr. Charles E. Moore, MD, FAACE, and Brittany Prince Evans, MHA. The current status and desired development goals for the Health Career Collaborative, Walk with a Doc, and COVID-19 Data Monitoring programs were exchanged.

The design of the M&E plan was developed and modified over a five-month period.

Each aspect of the M&E plan was presented on a biweekly basis to key UHI stakeholders to present an opportunity for feedback and modification. Meeting lengths ranged between 30 minutes and 2 hours.

3.2. Evaluation Questions

First, select evaluation questions for each program were identified. These questions were some of UHI's most pressing aims they wanted to answer. HCC had three evaluation questions, WWaD had two, and CDM had two as well. If properly measured and evaluated using guiding indicators, these questions can be answered. The current evaluation answers provided are ways to use the M&E plan to solve their initial questions.

3.3.Theory of Change and Logic Models

After consulting with various program stakeholders and program implementers the theory of change was developed. Gertler et al. define a Theory of Change (ToC) as "a description of how an intervention is supposed to deliver the desired results" (Gertler et al., 2016). It shows exactly how and why an initiative works through the cumulative links of inputs, activities, outputs, outcomes, other contexts of the initiative, and their intended impact. This framework can document the goal an organization is seeking to achieve and bring awareness to potential challenges the organization may encounter along the way. Overall, the ToC can assess if the intervention strategies and programs are creating an impact and improving the health of their target population.

The ToC was used to construct the following logic models. Logic models are a systematic and visual presentation of the relationships and resources in the program. The logic

models created for this thesis were extremely detail-oriented to the point where the theory of change could be seen which is why they were referred to as simplified theories of change. In the following logic models, activities are defined as the specific process, product, or action conducted during the program. The outputs are defined as tangible direct results of the activities or "what the project delivers" typically on a short-term basis. The outcome refers to a key intermediate change that is wished to be achieved. Finally, the impact refers to the long-term population-level impact and results of the program.

3.4. Logical framework

A logical framework or a logframe is a hierarchical and systematic M&E tool using critical elements to measure and track the progress toward a goal. It is a distillation of the logic model including the Narrative Summary-how the program wants to achieve the goal, Performance Indicators-how to measure progress and targets, Means of Verification-how the data is collected through the source and frequency, Assumption, and Risk-factors that could inhibit/ required for success. Within the narrative summary: the goal- represents the broader impact at the community level, outcomes- what is expected at the end of the program, outputs- specific results produced by the activities, and activities- tasks carried out to implement the program.

3.5. Indicators

The indicator table is an in-depth assessment of how the evaluation questions and answers will be measured. This information includes the indicator, definition, baseline, target, data source, frequency, responsible, and reporting. The indicators are standard intervals that can be measured and monitored to gauge the progress of the activities, outcomes, outputs, and goals.

3.6. Health Careers Collaborative Program

Evaluation Questions- HCC:

   I.   What percentage of the HCC students graduate from the host high school?

   II.   What percentage of the HCC students enroll in college?

   III.   Are former HCC students selecting Health or STEM majors after the completion of the program?

Evaluation Answer-HCC:

   I.   In the Outcome 2.0 row of **Table 1.** it is anticipated the percentage of HCC students that have graduated from the host high school can be measured annually by (# of senior HCC students graduating / all senior HCC students per year) x 100. This can be measured through graduation records and self-evaluation surveys by students. This percentage can be used to compare a baseline and target of other schools in Atlanta making the results easier to interpret no matter the total population size. More detailed information on how to measure these indicators can be found in **Table 4.**

   II.   In the Outcome 2.0 row of **Table 1.** it is anticipated the percentage of HCC students that have enrolled in college can be measured annually by (# of senior HCC students enrolled in post-secondary education for the Fall after their

graduation/ all senior HCC students graduating per year) x 100. This can be measured through a self-evaluation survey by students and Post-Secondary Institutional Transcripts. This percentage can be used to compare a baseline and target other schools in Atlanta making the results easier to interpret no matter the total population size. More detailed information on how to measure these indicators can be found in **Table 4.**

III.   In the Outcome 2.0 row of **Table 1.** it is anticipated the percentage of HCC students that have enrolled in college and selected a health or STEM major can be measured annually by (# of former HCC students matriculating in post-secondary education that declare a health or STEM major/ all former HCC students matriculating in post-secondary education per) x 100. This can be measured through a self-evaluation survey by students and Post-Secondary Institutional Transcripts. More detailed information on how to measure these indicators can be found in **Table 4.**

The proposed ToC for the Health Career Collaborative Program has as its objective to **encourage students to graduate from high school through project-based learning with a focus on science and healthcare-related issues by modeling a diverse range of health-related career pathways and empowering students to identify the most pressing health needs in their community.** To achieve its objective, the program implements six key activities: Mentorship, Tutoring, College Career Fairs, Project-Based Learning, and Weekly Health Presentations. As a result of the program's six activities, it is predicted that the program will deliver three outputs: # of established networking and collaboration opportunities between students and health and science professionals, # of established High School-Collegiate

networking opportunities for students, and the # of established engagement opportunities between students and their local community. These outputs are likely to occur because the students will be more equipped with the experiences and resources. As a result, these outputs will achieve four short-term, three intermediate, and three long-term outcomes as shown in **Figure 2.** all of which contribute to the goal of increased uptake of health careers by minority students. Thus, behavior changes, exposure, and anticipated interest would stem from the step-by-step actionable activities that the HCC program facilitates. Critical assumptions are made about social context and infrastructure in foreseeing activities to achieve their stated outputs and outcomes. These include students that attend these target high schools will want to participate in the program activities, the mentors and tutors can effectively communicate with the high school mentees, there is ongoing partnership contributing external stakeholders, and there are no other active barriers to student post-secondary enrollment. Likewise, there are a few risks that should be preliminarily considered. These include: activities might have to be virtual during the pandemic and if the school or UHI does not have enough funding to support events. This is visually portrayed in **Figure 2**.
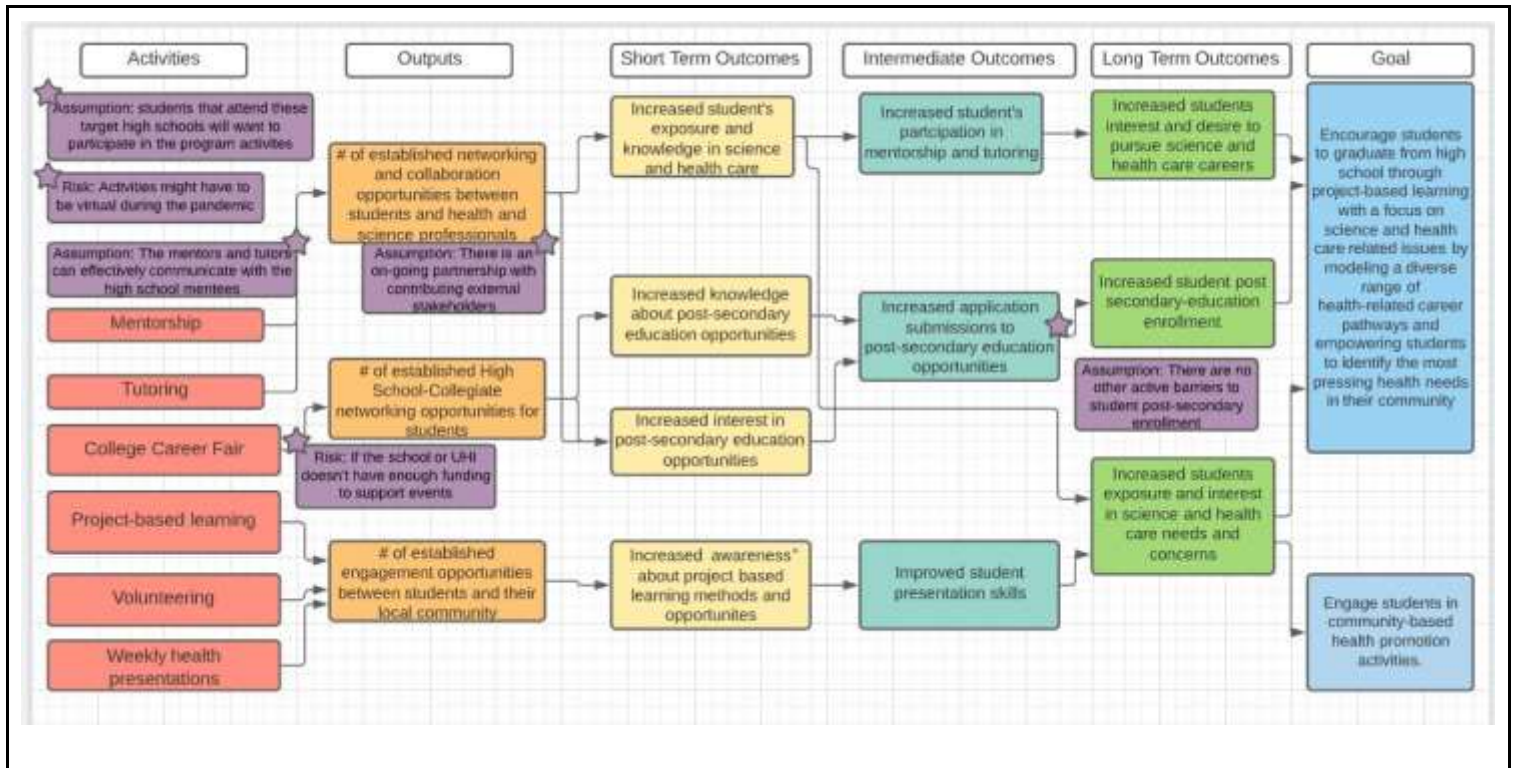
Figure 2. A simplified theory of change for the Urban Health Initiative's Health Careers

Collaborative program.

Table 1. Logical Framework constructed for the Urban Health Initiative's Health Career Collaborative program to display a thorough systematic process to measure and track their progress towards their goal.

Narrative summary	Performance Indicators	Means of Verification	Assumptions and Risks
Goal. Engage students to graduate from high school through project-based learning with a focus on science and healthcare-related issues by modeling a diverse range of health-related career pathways and empowering students to identify the most pressing health needs in their community		- interviews with key informants	
Outcome.	**1.0a** Overall and individual scores of students on an evaluation survey facilitated twice a year	**1.0** Survey using the evaluation Likert scale	**Assumption:** There are no other active barriers to student post-secondary enrollment

1.0 Increased students' exposure and interest in science and healthcare careers 2.0 Increased student post-secondary-education enrollment 3.0 Increased students' exposure and interest in science and healthcare needs and concerns	2.0a # of students that graduated from the host high school annually 2.0b # of students that enroll in post-secondary education annually 2.0c # of students that declare a health or STEM major at their college or university annually 3.0a Overall and individual scores of students on an evaluation survey and knowledge check completed quarterly	2.0 Graduation records; self-evaluation survey by students; Post-Secondary Institutional Transcript 3.0 self-evaluation survey by students; knowledge and skills check	**Assumption:** The school will release these records to UHI
Output. 1.1 Established networking and collaboration opportunities between students and health and science professionals 2.1 Established High School-Collegiate networking opportunities for students 3.1 Established engagement opportunities between students and their local community	**1.1a** # of networking events hosted monthly **1.1b** # of attendees at networking events monthly **1.1c** Average time spent on networking with other attendees monthly **2.1a** # of networking events hosted monthly **2.1b** # of attendees at networking events monthly **2.1c** Average time spent on networking with other attendees monthly **3.1a** # of engagement opportunities hosted monthly **3.1b** # of attendees at engagement events monthly	**1.1** attendance logs; program records; specialized surveys **2.1** attendance logs; interviews with key informants **3.1** attendance logs; program records	**Assumption:** there is an ongoing partnership with contributing external stakeholders **Risk:** If the school or UHI does not have enough funding to support events
Activities. **1.1.1** Partnered with local high schools in Atlanta and local science and health workers **1.1.2** Established mentorship and tutoring programs for the high schoolers **1.1.3** Mentorship and tutoring conducted for high schoolers **1.1.4** Improved high schoolers' individual performance in certain school subject areas **2.1.1** Partnered with local high schools in Atlanta and colleges and university representatives **2.1.2** Hosted college career fairs for high school students	**1.1.1a** # of local high schools and science/ health workers that participated in mentorship/ tutoring programs quarterly **1.1.2a** # of high schoolers reached that have access to weekly mentorship/ tutoring program **1.1.3a** # of high schoolers that completed weekly mentorship/ tutoring program **1.1.4a** # of high schoolers that improved their grades **2.1.2a** % of students who participated in the program that are actively enrolled in post-secondary education	**1.1.1**. Program records **1.1.2** Attendance records; sign-in sheets **1.1.3, 1.1.4** Score on the exam; grade in class; semester GPA; cumulative GPA **2.1.2** Target population-based survey	**Assumption:** students that attend these target high schools that will want to participate in the program **Assumption:** The mentors and tutors can effectively communicate with the high school mentees **Risk:** Programs might have to be virtual during the pandemic

3.1.1 Established a project-based learning curriculum for high school students **3.1.2** High schoolers presented health presentations	**2.1.2b** # of students who participated in the program who obtained their current institution connection from the college career fair **2.1.2c** # of post-secondary educational materials distributed **3.1.1a** # of high schoolers that participated in the project-based learning **3.1.2a** # of high schoolers enrolled in programs that complete health presentations monthly	**3.1.1, 3.1.2** checklist of students; schedule of student presentation dates Key informants exit interviews with UHI committee member	

	INDICATOR	DEFINITION How is it calculated?	BASELINE What is the current value?	TARGET What is the target value?	DATA SOURCE How will it be measured?	FREQUENCY How often will it be measured?	RESPONSIBLE Who will measure it?	REPORTING Where will it be reported?
Outcome: Increased student post-secondary-education enrollment	% of students that graduate from the host high school annually	(# of senior HCC students graduating / all senior HCC students per year) x 100	50-60% *national HCC program baseline avg.* Mays-71% Jackson High- 90% *as of 2021*	83.1% Avg. Atlanta public Schools Grad. Rate 93% avg Classical High	self-evaluation survey completed by HCC students and host school graduation records	Annually, starting June 2022	M&E Program lead	UHI meetings, website, social media accounts, annual report, data management system (google drive, one drive, etc.)
Outcome: Increased student post-secondary-education enrollment	% of students that enrolled in post-secondary education annually	(# of senior HCC students enrolled in post-secondary education for the Fall after their graduation/ all senior HCC students graduating per	Mays-52% Jackson High-56% *as of 2019*	59% Avg. Atlanta Public Schools enrollment Rate 93% avg Classical High	self-evaluation survey completed by HCC students and post-secondary institutional transcripts	Annually, starting June 2022	M&E Program lead	UHI meetings, website, social media accounts, annual report, data management system (google drive, one drive, etc.)

Table 4. Detailed information about the indicators constructed for the Urban Health Initiative's Health Careers Collaborative program to display how they should be measured, by who, and the timeline to track the progress towards their goal.

		year) x 100		School				
Outcome: Increased student post-secondary-education enrollment	% of students that declare a health or STEM major at their college or university annually	(# of former HCC students matriculating in post-secondary education that declare a health or STEM major/ all former HCC students matriculating in post-secondary education per) x 100	N/A	N/A	self-evaluation survey completed by HCC students and post-secondary institutional transcripts	Every two years, starting June 2022	M&E Program lead	UHI meetings, website, social media accounts, annual report, data management system (google drive, one drive, etc.)

3.7. Walk with a Doc Program

Evaluation Questions- WWaD:

I.   How will UHI be able to track the attendees of the WWaD program?

II.   How can UHI identify topics and speakers for these events?

Evaluation Answer-WWaD:

I.   In the Activities 3.1.2. row of **Table 2.** it is anticipated attendees can be tracked and measured weekly by # of attendees that participated in the walks (in-person or virtual). This can be measured through the attendance logs of the community members. More detailed information on how to measure these indicators can be found in **Table 5.**

II.   In the Activities 2.1.2. row of **Table 2.** it is anticipated community members can identify topics of interest monthly. This can be measured monthly by # of health presentations that were voted on or received a high score on average on the successfully submit feedback and survey ratings. More detailed information on how to measure these indicators can be found in **Table 5.**

The Walk with a Doc Program aims to **provide a no-cost walking program for anyone interested in living a healthier lifestyle and during the exchange of credible health information and patient/ provider trust-building.** To achieve its goal, the program implements six key activities: The TOC illustrates how these activities of walking, exchanging health information, and ongoing partnerships with various health professionals, will ultimately achieve key outputs related to # of facilitated activities to promote physical health, # of facilitated informational sessions on health topics, and # of engagement opportunities between community members and healthcare professionals. Ultimately three short-term, three intermediate, and three

long-term outcomes **(see Figure 3)**. Thus, health improvements are anticipated and would stem from the step-by-step actionable activities that the WWaD program initiates. Critical assumptions must be made about the social and interpersonal context for these activities to achieve their stated outputs and outcomes. These included: community members will want to participate and will be able to participate in the program via walking or via a stable Wi-Fi connection, interacting more frequently with health and medical professionals will form a positive relationship, this health communication will inspire behavior change and was the only barrier to achieving a healthier lifestyle. This is visually portrayed in **Figure 3**.
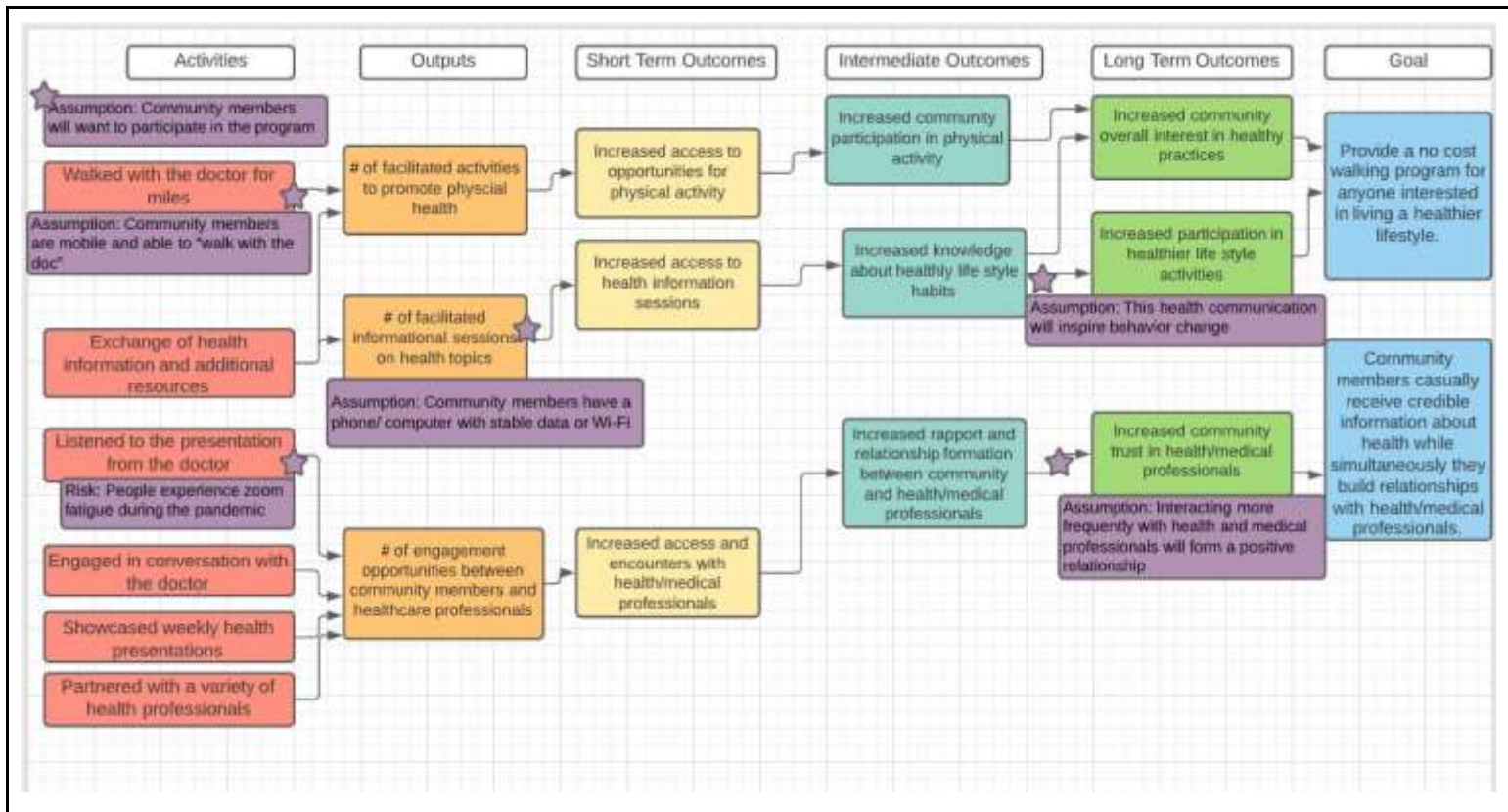

Figure 3. A simplified theory of change for the Urban Health Initiative's Walk with a Doc program.

Table 2. Logical Framework constructed for the Urban Health Initiative's Walk with a Doc program to display a thorough systematic process to measure and track their progress towards their goal.

Narrative summary	Performance Indicators	Means of Verification	Assumptions and Risks
Goal. Provide a no-cost walking program for community members to receive credible information about health while they simultaneously build relationships with health and medical professionals.		- interviews with key informants	
Outcome. **1.0** Increased community overall interest in healthy practices **2.0** Increased participation in healthier lifestyle activities **3.0** Increased community trust in health and medical professionals	1.0a Overall and individual scores of participants on an evaluation survey facilitated weekly 2.0a average # of community members that engaged in the walk annually 2.0b % of community members that found the information to be helpful annually 2.0c % of community members that plan to or have followed the medical advice retrieved from the program 3.0a Overall and individual scores from participants on an evaluation survey facilitated quarterly	1.0 Survey using the evaluation Likert scale sent to participant's email 2.0 attendance logs; zoom records; a survey by community members 3.0 self-evaluation survey by participants; retention rate; interviews with key informants	Assumption: Interacting more frequently with health and medical professionals will form a positive relationship Assumption: This health communication will inspire behavior change
Output. **1.1** Facilitated activities to promote physical health **2.1** Facilitated informational sessions on health topics **3.1** Engagement opportunities between community members and healthcare professionals	1.1a # of walks hosted monthly 1.1b # of participants at walking events monthly 1.1c Average physical distance covered by participants in walks weekly 2.1a # of health topics covered annually 2.1b # of participants at walking events biweekly 3.1a # of engagement opportunities hosted monthly	1.1 program records; attendance logs; zoom records; Map My Walk app 2.1 event description/ program logs; attendance logs; zoom records 3.1 attendance logs; program records	Assumption: Community members have a phone/ computer with stable data or Wi-Fi

	3.1b # of attendees at engagement events monthly 3.1c # of healthcare professionals at the engagement events monthly 3.1d Average time of engagement event monthly		
Activities. 1.1.1 Walked with the doctor for miles 2.1.1 Exchanged health information and additional resources 2.1.2. Community members expressed interest in health topics 3.1.1 Listened to the presentation from the doctor 3.1.2 Engaged in conversation with the doctor 3.1.3 Showcased weekly health presentations 3.1.4 Partnered with a variety of health professionals	1.1.1a # of miles walked weekly 1.1.2a # of attendees that participated in the walks weekly 2.1.1a # of health topics covered monthly 2.1.2a # of health presentations of interest to the community participants monthly 3.1.1a # of doctors who present information weekly 3.1.2a # of attendees that participated in the walks weekly 3.1.3a # of presentations annually 3.1.4a # of doctors who present information weekly 3.1.4b # of partnering organizations participate weekly	1.1.1. Program records; Map My Walk app 1.1.2 Attendance records; zoom records 2.1.1 event description/ program logs 2.1.2. Survey using the evaluation Likert scale sent to participant's email 3.1.1, 3.1.2, 3.1.4 Attendance logs of medical professionals and community members 3.1.3 event description/ program logs	Assumption: Community members are mobile and able to "walk with the doc" Assumption: Community members will want to participate in the program Risk: People experience zoom fatigue during the pandemic

	INDICATOR	DEFINITION How is it calculated?	BASELINE What is the current value?	TARGET What is the target value?	DATA SOURCE How will it be measured?	FREQUENCY How often will it be measured?	RESPONSIBLE Who will measure it?	REPORTING Where will it be reported?
Activities: 3.1.2 Engaged in conversation with the doctor	# of attendees that participated in the walks weekly	# of attendees that participated in the walks (in-person or virtual)	N/A	Attendance to other WWaD chapters in ATL	Attendance logs	weekly, starting June 2022	Ishaan Jathal-project coordinator	UHI meetings, annual report, data storage management system (google form, etc.)
Activities: 2.1.2. Community members expressed interest in health topics	# of health presentations that interest the community participants monthly	# of health presentations that were voted on, or received a high score on average on the successfully submit feedback and survey ratings	N/A	All	A survey using the Likert scale for evaluation sent to participant's email	monthly, starting June 2022	Ishaan Jathal-project coordinator	UHI meetings, annual report, data evaluation management system (google forms, Qualtrics, survey monkey, etc.)

Table 5. Detailed information about the indicators constructed for the Urban Health Initiative Walk with a Doc program to display how they should be measured, by who, and the timeline to track the progress towards their goal.

3.8. COVID-19 Data Monitoring Program

Evaluation Questions- CDM:

I. Are the current vaccine uptake mobile clinics, and vaccine education making an impact in their target areas?

II. How many people have the UHI vaccine education video reached?

Evaluation Answer-CDM:

I. In the Goal row of **Table 3.** it is anticipated that COVID-19 vaccine education, an increase in vaccine uptake, and monitor COVID-19 cases can be measured after each event by UHI's data content from the app, interviews with key informants, and preliminary community needs assessments. These instruments will measure # of vaccine education events hosted in Manning, SC, Atlanta, GA, and Tuskegee, AL, # of vaccines administered to affected communities in a given time period, and # of residents in the target population that tests positive for COVID-19 and have the virus. More detailed information on how to measure these indicators can be found in **Table 6.**

II. In the Activities 3.1.3. row of **Table 3.** it is anticipated the average # of community members that the video reached monthly is defined by # of attendees that opened the email and clicked on the video. This indicator can be measured through an email tracker software program. More detailed information on how to measure these indicators can be found in **Table 6.**

The proposed ToC for the COVID-19 Data Monitoring Program aims to **provide COVID-19 vaccine education, increase vaccine uptake, eliminate, and monitor cases, in disproportionately affected minority communities in Manning, South Carolina, Atlanta, GA, and Tuskegee, AL.** As a result of these five activities of 1.) Supplied schools with funds for incentives and information for education, 2.) Supplied faith-based organizations with funds for incentives and information for education, 3.)Hosted COVID-19 vaccine distribution events, 4.) Hosted focus groups discussions, and 5.) Health communication through video distribution, it is expected that the program will deliver three outputs. These outputs being the # of in-person COVID-19 educational opportunities, # of in-person mobile vaccine centers, and # of expanded use of the UHI app-Hope Bussenius will achieve four short-term outcomes, three intermediate outcomes, and three long-term outcomes. Thus, it is hypothesized that health improvements would stem from the culmination of the actionable activities that the CDM program implements. Critical assumptions must be made about the social and interpersonal context for these activities to achieve their stated outputs and outcomes. These include: stakeholders will use funds allocated for COVID-19 education, the community will have COVID-19 vaccine knowledge retention after education, the lack of access and lack of COVID-19 vaccine literacy were the only barriers to COVID-19 vaccine uptake in the community and the case records are true positives and not false positives. This is visually portrayed in **Figure 4**.
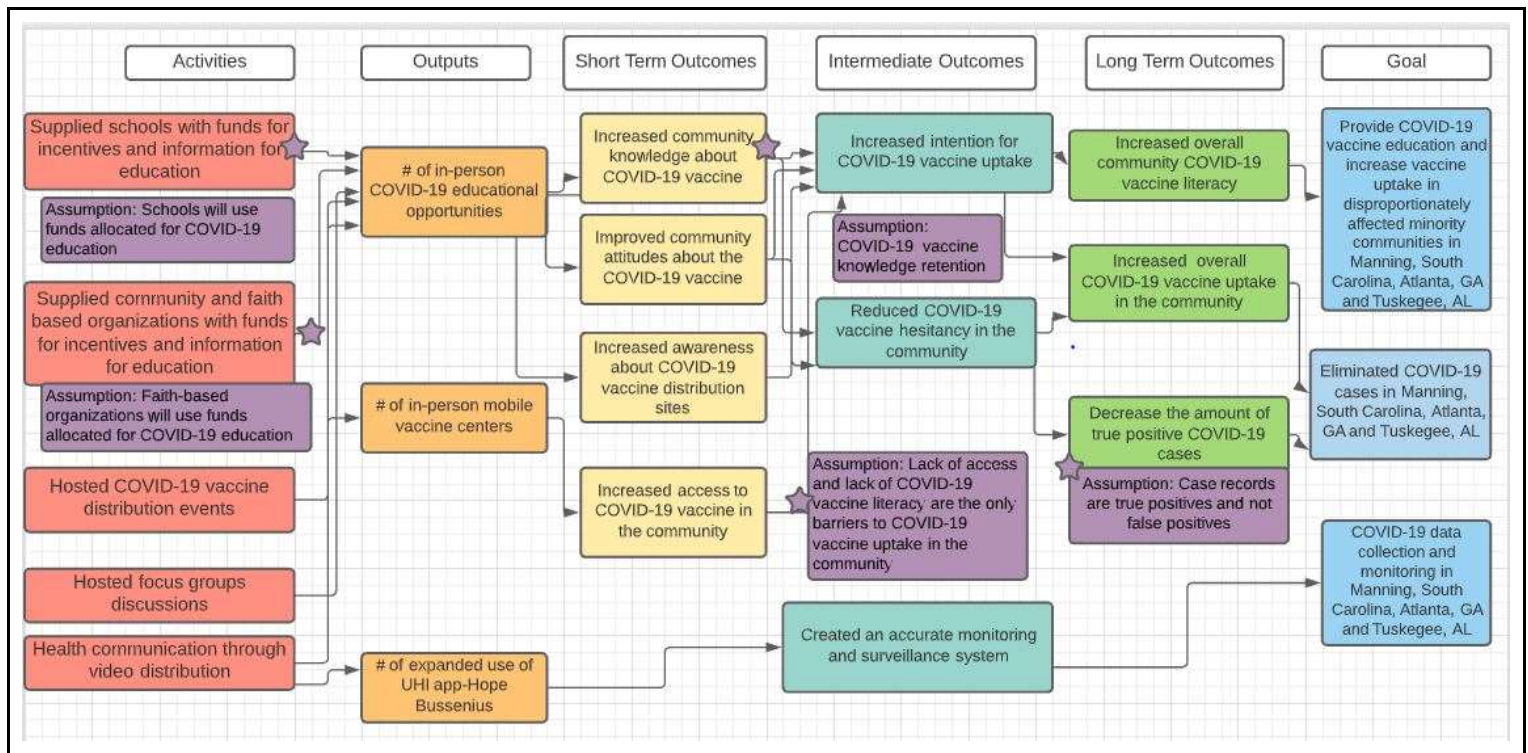
Figure 4. A simplified theory of change for the Urban Health Initiative's COVID-19 Data

Monitoring program.

Table 3. Logical Framework constructed for the Urban Health Initiative's COVID-19 Data Monitoring program to display a thorough systematic process to measure and track their progress towards their goal.

Narrative summary	Performance Indicators	Means of Verification	Assumptions and Risks
Goal. Provide COVID-19 vaccine education, increase vaccine uptake, and monitor COVID-19 cases in disproportionately affected minority communities in Manning, South Carolina, Atlanta, GA, and Tuskegee, AL	# of vaccine education events hosted # of vaccines administered to affected communities # of true positive COVID-19 cases in disproportionately affected minority communities	-UHI app data content - interviews with key informants -the preliminary community needs assessment	
Outcome.	1.0a Overall knowledge check score retrieved pre/post program monthly	1.0 knowledge check; exiting survey for community members	Assumption: Case records are true positives and not false positives

1.0 Increased overall community COVID-19 vaccine literacy **2.0** Increased overall COVID-19 vaccine uptake in the community **3.0** Decreased the amount of true positive COVID-19 cases	2.0a # of COVID-19 shots administered in target communities monthly 3.0a # of true positive COVID-19 cases counted monthly	2.0 UHI program COVID-19 immunization records; CDC COVID-19 immunization records, State Health Department COVID-19 immunization records 3.0 CDC COVID-19 case surveillance records, State Health Department COVID-19 surveillance records	
Output. **1.1** In-person COVID-19 educational opportunities **2.1** In-person mobile vaccine centers **3.1** Expanded use of UHI app-Hope Bussenius	1.1a # of COVID-19 educational opportunities hosted monthly 1.1b # of community members in attendance monthly 1.1c Average knowledge gained at events 2.1a # of vaccines distributed monthly 2.1b # of community members reached 3.1a # of people using the UHI app 3.1b average amount of information UHI app holds monthly	1.1 program records; attendance logs; knowledge check 2.1 Immunization records, attendance logs 3.1 UHI-app data records	Assumption: COVID-19 vaccine knowledge retention Assumption: Lack of access and lack of COVID-19 vaccine literacy are the only barriers to COVID-19 vaccine uptake in the community
Activities. 1.1.1 Supplied schools with funds for incentives and information for education 2.1.1 Supplied community and faith-based organizations with funds for incentives and information for education 3.1.1 Hosted COVID-19 vaccine distribution events 3.1.2 Hosted focus groups discussions	1.1.1a # of schools reached monthly 1.1.1b amount of one-time funds supplied at the start of the partnership 2.1.1a # of community and faith-based organizations reached monthly 2.1.1b amount of one-time funds supplied at the start of the partnership 3.1.1a average # of community members that attended the event monthly	1.1.1. budget sheet, partner logs 2.1.1 budget sheet, partner logs 3.1.1 Attendance logs of community members; UHI program COVID-19 immunization records	Assumption: Schools will use funds allocated for COVID-19 education Assumption: Faith-based organizations will use funds allocated for COVID-19 education

3.1.3 Health communication through video distribution	3.1.1b # of vaccine distribution events held monthly 3.1.1c # of community members that received the COVID-19 vaccine at events monthly 3.1.2a # of community members that attended the focus group monthly 3.1.3a average # of community members that the video reached monthly	3.1.2 Attendance logs of community members 3.1.3 Email tracker software program	

	Table 6. Detailed information about the indicators constructed for the Urban Health Initiative COVID-19 Data Monitoring program to display how they should be measured, by who, and the timeline to track the progress towards their goal.							
	INDICATOR	**DEFINITION** How is it calculated?	**BASELINE** What is the current value?	**TARGET** What is the target value?	**DATA SOURCE** How will it be measured?	**FREQUENCY** How often will it be measured?	**RESPONSIBLE** Who will measure it?	**REPORTING** Where will it be reported?
Goal: Provide COVID-19 vaccine education, increase vaccine uptake, and monitor COVID-19 cases in disproportionately affected minority communities in Manning, South Carolina, Atlanta, Georgia, and Tuskegee, Alabama	# of vaccine education events hosted # of vaccines administered to affected communities # of true positive COVID-19 cases in disproportionately affected minority communities	# of vaccine education events hosted in Manning, SC, Atlanta, GA, and Tuskegee, AL # of vaccines administered to affected communities in a given time period # of residents in the target population that test positive for COVID-19 and have the virus	2 N/A N/A	N/A 70% of the target population <10% of the target population	UHI app data content, interviews with key informants, Georgia Vaccine Registry Immunization preliminary community needs assessment	At the conclusion of each event measured quarterly, starting June 2022	-CDM M&E team lead -Hope Bussenius	UHI meetings, annual report, accessible on the UHI app database, accessible on the ongoing data management system, (google form, etc.), national and local health servers

Activities:	average # of community members that the video reached monthly	# of attendees that opened the email and clicked on the video	N/A	N/A	Email tracker resources YouTube views	weekly, starting June 2022	-CDM M&E team lead -Brittany Prince	UHI meetings, annual report, accessible on ongoing data management system (google drive, one drive, etc.)
3.1.3 Health communication through video distribution								

Chapter 4: Discussion and Public Health Implications

4.1. Strengths

Research Gaps Closed

The survey completed after the HCC program would account for demographics such as race, ethnicity, and SES to monitor health disparities that might be attributable to structural factors. The data gathered from this survey could be utilized for future research and help close the gaps in current programs.

Collaborative partnerships and upholding the mission statement

The UHI has many strengths that effectively contribute to the function of the current HCC, WWaD, and CDM programs. This organization successfully upholds its mission statement to "build collaborative partnerships" through a wide range of stakeholders that contribute to different facets whether it is being supportive of infrastructure, capacity building, resource allocation, and/or logistics. The HCC has many stakeholders ranging from the host high schools of Redan High School, Benjamin E. Mays High School, Maynard H. Jackson High School, and Clarkston High School to the health and science professionals of Spelman, Morehouse, and Emory University. The WWaD program has thrived with the current partnerships between Grady Hospital and Emory Healthcare, while the CDM has effectively partnered with various schools and faith-based community organizations. These partnerships make it easier to scale up the programs and have greater reach because they will have more manpower and access to resources.

As an organization, the UHI demonstrates a profound commitment to health equity. Through the previously mentioned partnerships, the UHI supports and works with predominantly

minority communities impacted by both health disparities and adverse effects as a result of residing in lower resource communities. The target population is reached which is indicated by the effective collection and monitoring of demographic information from each program. Monitoring the data that is collected ensures the program meets the target population as declared in the mission and vision statement.

The WWaD program has the potential to build trust between medical professionals and underserved, under-resourced communities. These potential relationships are displayed through the ToC in **Figure 3.** The value proposition that results from building lasting and trusted relationships is not currently reflected or highlighted on any UHI WWaD marketing materials but should be. Gaining trust within these communities is essential to health communication, education, and promotion that will eliminate health disparities. The weekly attendance of community members and health care professionals to the WWaD programs will likely lead to increased engagement between the groups. A forum such as this presents an opportunity to build relationships, develop rapport and eventually create a foundation of trust.

4.2. Limitations

Once the evaluation plan is in place, UHI will need to ensure there are sufficient and sustainable M&E program capacities inclusive of staff, systems, and a plan. Having a defined M&E plan helps to keep an organization mission-driven, ensures that resources are being used effectively, and offers insight for program enhancement. Without sufficient M&E staff and systems, there is no way to identify gaps in programming, explore solutions to close gaps or develop goals that lead to the implementation of successful strategies. M&E capacity was not in place for all 15 programs that the UHI offered. If each program is to remain viable these

discrepancies should be addressed. Lack of qualitative and quantitative M&E data could limit potential funding opportunities thus impacting overall program success. Each of the 15 programs should have an equitable opportunity to monitor and evaluate their successes and impacts within the communities they serve.

There are many discrepancies noted from the online presence of UHI that could lead to confusion for the intended audience. Examples include multiple versions of the overall mission statement on the website and several versions of the goal statements between the national programs and the UHI subset programs. These inconsistencies could also lead to the viewing audience making presumptions about UHI's ability to create strategic alignment between the national and local programmatic focus. This presumption could persuade the audience's support, participation, image, or impressions of the organization.

There is no central repository system or database that is accessible to all UHI employees and specifically the role of the M&E Team Leads. This is a limitation because it prevents the organizations from operating with a collective understanding of all 15 programs. The UHI formerly used Dropbox to store information but recently switched to Basecamp. Not all 15 programs utilize Basecamp, and of those that do, not all UHI faculty, staff and M&E leads have access. Additionally, the information is not current nor fully encompasses each component of the program. This also makes data more difficult to gather and synthesize when it comes time to identify trends, perform comparative analysis, write grant proposals, develop other collaborations and partnerships, present evidence of meeting required standards, or create and deliver annual reports.

4.3. Recommendations

Integrate new activities in the HCC program

The integration of a volunteering activity would help to augment the staff, increase visibility and advocacy within the communities and support the goal of HCC as shown previously in **Figure 2**. Studies have shown that volunteering coupled with mentoring makes for greater success of the overall program.

Recruitment, retention, and even disbursement of M&E capacities

Potential internal M&E program inequities can be rectified or prevented through an even distribution of M&E experts throughout each program. To achieve this the UHI should modify their recruitment strategies and incentives. Students could be recruited if they see advertisements posted on the Thesis/ Applied Practicum Experience (APE) job board, flyers around the professional schools, or advertisements in the weekly emailed distribution listserv. The UHI could consider partnering with and recruiting from specific departments like the Behavioral Social and Health Education Sciences (BSHES) Department, and Global Health Department. Both areas of advanced degree studies equip students with the knowledge and skillset to effectively evaluate health programs. More students might also be drawn to work with the UHI if other incentives were offered. For example, the opportunity to become a UHI fellow should be marketed on the UHI website, shared with university career placement offices, Linked In resources, and other talent acquisition professional organizations and pipelines. Furthermore, if there was a sustainable partnership between the Rollins Earn and Learn (REAL) program a larger pool of students would be reached, and they would be incentivized by the compensation for their work.

Likewise, the research that was conducted by Limetree Research on a national scale, could be conducted for the WWaD Atlanta chapter to assist with retrieving specific baseline data for the M&E plan. The Limetree Research study included a descriptive and analytical cross-sectional study comprised of surveys, in-depth interviews, and focus group discussions. These research data collection methods could help record vital information including demographics, miles walked, likes and dislikes of the program. The results from these data collection methods could unveil innovative ideations that contribute to the successful execution of these programs.

Scale-up recruitment strategies for WWaD attendees and speakers

WWaD programs could benefit from expanded recruitment efforts for attendees and speakers. Current virtual walks could collaborate and dual host with other established WWaD chapters. This approach could not only conserve resources but also create unity amongst the different WWaD chapters and attendees around the globe. Attendees could be recruited through snowballing efforts. Perhaps an ongoing competition might incentivize attendees to bring a new person to the meetings each week. Additional messaging and advertisement gatekeeping could occur in doctor's lobbies and offices to inform patients when they are in the waiting rooms. Programs and highlighted benefits could be mentioned during the conclusion of in-person or telehealth doctors' visits. Flyers for WWaD could also be distributed in group chats via Facebook, LinkedIn, or GroupMe to other organizations with similar missions and target populations. Visibility in other community outreach events such as women's and men's health fairs could help to market UHI's programs and benefits. Furthermore, walks could expand beyond the current speaker participation pool from Grady Hospital and Emory Healthcare. Partnerships for potential speakers could expand to other organizations and health systems that

have similar missions or qualified personnel including but not limited to the local WellStar

Hospital health system or the National Medical Association (NMA). The NMA is the oldest and

largest professional organization that represents over 50,000 African American physicians

committed to improving the quality of health of minorities and those in disadvantaged

communities. Similarly, they aim to achieve this mission through various professional

development, partnerships, and community health education initiatives (NMA, n.d.). These

collaborations could expand the outreach, network, and audience of program initiatives.

Scale-up current resources and appoint new positions

The last recommendation is to consider expanding public relations and social media

capacities. Supplementary interns, staff, or volunteers should be recruited to create, update, and

oversee an interactive social media account for each program which could be used to reach and

attract more attendees. Scaling up the social media presence would spread awareness about the

subject matter and the program initiatives. UHI should consider further development of the

website to provide additional media marketing, interactive components, and updated

information. A more thorough and organized approach to the layout of the online presence would

enhance the overall professional image and possibly even boost the number of viewers.   It

would first need to be updated to include all relevant information pertaining to the current status,

upcoming events, and interactive social media account links of the HCC, WWaD, and CDM

programs. Once social media accounts are established it would be the responsibility of the social

media interns to oversee the frequent dissemination of interactive communications on the

platforms, keeping the information visually appealing, relevant, and regularly updated. A more

comprehensive multi-channel PR strategy should be formed to address the details.

Utilize free data collection, analysis, and reporting resources to enhance the current programs

Various apps can be used to collect the data and miles walked during the WWaD program. The current health app on iPhones tracks miles and steps as well as other apps that could be downloaded including Walkmeter GPS and MapMyWalk GPS for iPhone, Android, or Windows. Email trackers could be used to monitor the dissemination of COVID-19 health education and promotion messaging sent via email/ listserv.

4.4. Public Health Implications

HCC has many intrapersonal health implications and benefits. It has the ability to impact the community, medical students, and under-served communities. The medical students and healthcare professionals will be able to enter the workforce with a better understanding about the socio-cultural context of under-served communities, aiding them in becoming better physicians. This program also grooms future health professionals that will be able to exemplify cultural humility with each patient and topic they encounter. Monitoring and evaluating this program will help stakeholders measure progress toward the optimal outcomes of eradicating health care disparities, other social determinants of health, and the promotion of health equity for all.

WWaD has many positive public health implications including an increase in physical, mental, social, and environmental health benefits. Research has shown that walking and engaging in moderate-intensity exercise for the recommended 150 minutes per week can help with weight control, and decrease the risk of cardiovascular disease, depression, type 2 diabetes, cancer, high blood pressure, and high cholesterol (Rieck, 2020). When the attendees walk it not only clears their minds but also enhances their awareness about the health topic improving their

mental health. A majority of participants in a WWaD survey indicated they feel the program enhanced knowledge, improved their mood, increased their energy level, and increased their confidence to be active (Horton, K., & Loyo, J., n.d.). As previously mentioned, it also has the potential to increase interpersonal relationships and trust between doctors and marginalized patients. This would be an equitable outcome because the trust in doctors and medicine has been eroded for many members of minority communities due to systemic racism (Abbasi, 2020). Dr. Linda Rae Murray, MD, MPH former president of the American Public Health Association President, and current, assistant professor at the University of Illinois at Chicago School of Public Health, insists that physicians need to address questions and concerns raised by underserved communities to help dispel myths and understand real-world struggles (Abbasi, 2020). Finally, physicians and participants can engage in this activity typically outdoors in nature which promotes environmental health while they can receive the physical and mental benefits associated with being in nature.

CDM has various physical and educational public health implications including the increased overall uptake of the COVID-19 vaccine. This vaccine has been shown to prevent severe illness, hospitalization, and death from COVID-19 (CDC, 2022). Monitoring data would allow the organization to track the number of true positive cases and vaccine uptake. A probability evaluation of the CDM program can highlight evidence of causation, efficiency, generalizability, and effectiveness, also known as internal and external validity. These factors would be essential to incorporate in annual reports and grant proposals.

4.5. Conclusions

This special studies project spearheaded the construction of rigorous M&E of the HCC, WWaD, and CDM of Emory University's UHI. UHI is currently exemplifying its mission statement with innovative programming and constructive collaborations, yet could benefit from enhancing their capacities. Once these various recommendations are applied and the newly developed comprehensive M&E plan is implemented, the UHI will be able to advance their mission and measure the progress toward outcomes in their target communities. For UHI and all related health organizations as well as healthcare providers, this work is a journey of humanity - making a far-reaching impact person to person, across local communities, throughout the city, state, the nation and indeed the world.

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