

# Tenth Annual DC Public Health Case Challenge: A Public Health Approach to Improve the Health of Women Experiencing Homelessness in DC

**Amy Geller**, National Academies of Sciences, Engineering, and Medicine; **Alina Baci**, National Academies of Sciences, Engineering, and Medicine; **Maggie Anderson**, National Academies of Sciences, Engineering, and Medicine; **Ayomide Aduloju**, Georgetown University; **Bhumi Ashokbhai Patel**, George Mason University; **Bukky Babalola**, Howard University; **Shawn Bayrd**, George Washington University; **Marjorie Brooks**, Uniformed Services University; **Carys Carr**, Howard University; **Byron Cheung**, University of Maryland Baltimore; **Sara Devaraj**, University of Maryland Baltimore; **Fatima Elgarguri**, George Washington University; **Anika Hamilton**, University of Maryland Baltimore; **Felix Harper**, George Mason University; **Anna Hochberg**, George Washington University; **Christina Interrante**, University of Maryland Baltimore; **Nick Jennings**, George Washington University; **Erica Kim**, Georgetown University; **Hyun Lee**, Uniformed Services University; **Julia Mandeville**, George Mason University; **Elizabeth McAllister**, University of Maryland Baltimore; **Shereika Mills**, Georgetown University; **Nai'la-Mareen Morris**, American University; **Ayomide Ogunsakin**, Howard University; **Norbert Owusu**, Uniformed Services University; **Wendy Post**, George Washington University; **Lemba Priscille Ngana**, George Mason University; **Shadan Rahmani**, American University; **Sommere Robinson**, Howard University; **Martha Rondon**, University of Maryland Baltimore; **Teresa Russell**, Uniformed Services University; **Lindsay Smith**, American University; **Brooke Solomon**, Howard University; **Salvatore Sulimay**, Georgetown University; **Matt Sullivan**, American University; **Soukeyna Sylla**, George Washington University; **Joshua Trowell**, Uniformed Services University; **Nicole Vernet-Jonas**, Georgetown University; **Sravya Vunnam**, George Mason University; **Alex Wheeler**, Howard University; and **Allison Willett**, Georgetown University

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This discussion paper provides an overview of the tenth annual District of Columbia (DC) Public Health Case Challenge,<sup>1</sup> a student competition held in 2023 by the National Academy of Medicine (NAM) and the Roundtable on Population Health Improvement in the Health and Medicine Division of the National Academies of Sciences, Engineering, and Medicine (the National Academies). The Case Challenge, which is both inspired by and modeled on the Emory University Global Health Case Competition,<sup>2</sup> is designed to promote interdisciplinary, problem-based learning in public health and to foster engagement with local

universities and their surrounding communities. The event brings together graduate and undergraduate students from multiple disciplines and universities to promote awareness of and develop innovative solutions for 21st-century public health challenges as experienced by communities in the District of Columbia.

Each year, the organizers work with a student case-writing team to develop a case based on a topic that is relevant to the DC area but also has broader national and, in some cases, global resonance. Content experts are recruited as volunteer reviewers of the case. Universities located in the

1 See <https://nam.edu/initiatives/dc-public-health-case-challenge/> (accessed March 20, 2024).

2 See <https://globalhealth.emory.edu/students/case-competitions/index.html> (accessed March 20, 2024).

Washington, DC area are invited to form teams of three to six students currently enrolled in undergraduate or graduate degree programs. In an effort to promote interactions among a variety of disciplines, the competition requires each team to include representation from at least three different schools, programs, or majors.

Two weeks before the Case Challenge event, the case is released, and teams are charged to employ critical analysis, interdisciplinary collaboration, and thoughtful action, to develop a solution to the problem outlined in the case. On the day of the competition, teams present their proposed solutions to a panel of judges, composed of representatives from DC organizations and other subject matter experts. The prize categories vary by year, but generally include a grand prize as well as awards for practicality, interdisciplinary solutions, and a wildcard prize. In 2023, a grand prize, an interdisciplinary solutions prize, and two wildcard prizes were awarded.

### 2023 Case: A Public Health Approach to Improve the Health of Women Experiencing Homelessness in DC

The 2023 challenge was to improve the health of women experiencing homelessness in DC using a public health approach. The case asked the student teams to develop a proposal for a fictitious grant of \$1 million to be used within a two-year span.<sup>3</sup> The challenge required the student teams to develop a sustainable solution to improve the health and well-being of adult women living in DC at risk of being homeless or experiencing homelessness. The solution was expected to outline a rationale and evidence base for the intervention, as well as an implementation plan, budget, and evaluation plan.

The following background information is part of what was shared with the competing students by the student case-writing team. Homelessness presents a complex and pressing public health challenge at the national, state, and local levels, impacting hundreds of thousands of individuals across the United States annually. The term “homeless” encompasses those residing in emergency shelters, transitional housing, domestic violence shelters, runaway youth shelters, safe havens, or inhabiting places not intended for human habitation, including streets, parks, alleys, abandoned buildings, and stairwells (Metropolitan Washington Council of Governments, 2023b).

Despite a 15 percent reduction in homelessness from 2007 to 2016, there has been an increase since 2017, with Washington, DC reporting 4,922 homeless individuals in 2023, and the DC region reporting 8,944 homeless individuals that same year (Metropolitan Washington

Council of Governments, 2023a; National Alliance to End Homelessness, n.d.). This issue affects diverse demographics, with Black individuals disproportionately impacted due to historical discrimination, along with veterans and older adults facing health concerns like Alzheimer’s disease and cancer (Metropolitan Washington Council of Governments, 2023b). In the DC metropolitan area, family households represent 33 percent of the homeless population, with children comprising 21 percent and facing education disruptions and health risks (Metropolitan Washington Council of Governments, 2023b).

Homelessness among women is a pressing public health issue due to the unique challenges they face, including personal safety concerns, limited access to menstrual hygiene products and reproductive health care, and higher rates of trauma and abuse. Women experiencing homelessness often lack safe and stable housing options, making them more vulnerable to physical and sexual violence (Career and Recovery Resources, 2021). This not only poses immediate safety risks but also contributes to long-term physical and mental health consequences (Parrillo and Feller, 2017). Addressing homelessness among women requires a multifaceted approach that includes providing safe and affordable housing, access to essential health services, and trauma-informed care.

The case framed the issue through four scenarios, illustrating a range of issues related to women experiencing homelessness in DC. Although these four scenarios are fictional, they are inspired by real stories and highlight the social determinants of health (e.g., access to care and help, financial stability, and community).

The participating teams were also provided with comprehensive background information on the Case Challenge topic. This included an overview of the social ecological model (SEM) and the social determinants of health (SDOH), insights into the housing first model, and a detailed overview of Washington, DC demographics and governance, including the city’s eight wards (CDC, 2022). In addition, several root causes of homelessness and structural inequities were discussed, examining the impact of physical and social environments, education, and housing. Furthermore, topics such as monitoring and surveillance, creating protective community environments, and the importance of accessible community support and resources were covered. Lastly, the case provided overviews of relevant DC-based organizations dedicated to addressing homelessness and improving the health and well-being of women experiencing homelessness.

While the judges deliberated, the students had the opportunity to provide a three-minute overview of their

3 See [https://nam.edu/wp-content/uploads/2023/11/2023-DCPHCC-Case\\_FINAL\\_1123.pdf](https://nam.edu/wp-content/uploads/2023/11/2023-DCPHCC-Case_FINAL_1123.pdf) (accessed March 20, 2024).

solutions, which was followed by a question-and-answer period. The students then heard expert perspectives on (1) how a local nonprofit is working with the community to address homelessness; and (2) the power of young people to bring change to pressing social problems. The speakers were Valerie DiCristoforo from Everyone Home DC and Martha Sanchez from Young Invincibles.

Valerie DiCristoforo discussed the work of Everyone Home DC—a nonprofit organization serving thousands of individuals and families in DC that pursues long-term solutions to homelessness while advocating for racial and economic justice (Everyone Home DC, n.d.). This nonprofit works closely with religious and secular organizations, large and small businesses, and a wide range of other groups. DiCristoforo discussed several of the barriers and opportunities associated with the organization's work. For example, the way in which addressing structural factors and systems change is a long-term commitment, but there are also policy changes that can be made now.

Martha Sanchez shared the history of Young Invincibles, a nonprofit organization that was founded by students in 2009 to bring the voices of young people to the debate over health care reform (Young Invincibles, n.d.). The organization has since expanded to a national organization and works on topics such as health care, higher education, and economic security. Sanchez highlighted several of the organization's accomplishments at the national and state level, including student loan debt relief efforts, a report on the financial landscape for US youth, and state level mental health legislation.

These impactful talks were followed by a question-and-answer period with the students.

### Team Case Solutions

The following synopses, prepared by students from the seven teams that participated in the 2023 Case Challenge, describe how teams identified a specific need in the topic area, how they formulated a solution to intervene, and how they would implement their solution if they were granted the fictitious \$1 million allotted to the winning proposal (budgetary information is not included here). Team summaries are presented beginning with the winners of the Grand Prize, followed by the winners of the Harrison C. Spencer Memorial Interprofessional Prize and two Wild Card Prizes, with the remaining team summaries provided in alphabetical order by institution.

The 2023 Grand Prize was awarded to the team from The George Washington University. Three additional prizes were awarded: the Harrison C. Spencer Memorial Interprofessional Prize to the team from Georgetown

University; a Wildcard Prize for a strong community-centered approach to the team from Howard University; and a second Wildcard Prize for innovation to the team from the University of Maryland Baltimore.

### The George Washington University: & Every Woman Project

Team members: Shawn Bayrd, Fatima Elgarguri, Anna Hochberg, Nick Jennings, Wendy Post, and Soukeyna Sylla  
Summary prepared by: Shawn Bayrd, Fatima Elgarguri, Anna Hochberg, Nick Jennings, Wendy Post, and Soukeyna Sylla

Faculty advisors: Gene Migliaccio, Jen Skillicorn, and Karla Bartholomew

#### Background, Statement of Need, and Goal

Washington, DC has one of the highest rates of homelessness in the United States with an estimated 4,410 people experiencing homelessness as of January 2023 (TCP, n.d.). While several populations (such as African Americans, single women, and older adults) are disproportionately affected, LGBTQ young adults aged 18–24 face unique challenges that make them particularly vulnerable to the homelessness crisis in DC. In 2022, about 378 single adults aged 18–24 identified as LGBTQ, accounting for one in three minors and young adults experiencing homelessness in DC (TCP, 2023). Social isolation, exclusion, and systemic discrimination are root causes of homelessness for LGBTQ young adults; these factors are also barriers that hinder access to services for this population. This population suffers from higher rates of mental health struggles compared to their non-LGBTQ counterparts and are more likely to have depression, stress, and problems with emotions (The Trevor Project, 2023).

& Every Woman aims to address the mental health of 18–24-year-old LGBTQ women experiencing homelessness in DC. It will be implemented in two low-barrier shelters in Wards 2 and 8 and will aim to reduce reported symptoms of depression and anxiety among homeless LGBTQ women aged 18–24 by 15 percent from the measured baseline within 2 years.

#### Objective 1: Increase Resource Knowledge and Use

Despite the mental health, housing, and job training services available to LGBTQ young adult women in DC, they often do not know that these services exist, or how to interact with these institutions in order to receive the services they need.

The team proposed three activities to increase the knowledge and use of these local resources. The first activity, Mapping Up, is a comprehensive map of pertinent resources available to young adult unhoused LGBTQ women in DC,

which will be maintained by program staff to ensure that resources are updated as appropriate. The second activity, the Discord Community Resource, employs a free, existing social media platform with a strong LGBTQ user base to foster a safe-space virtual forum for unhoused LGBTQ women in DC to meet, share resources and experiences, and build their own online community. Third, the Partner Connect Program connects young unhoused LGBTQ women with older LGBTQ women who have previously experienced housing instability to foster sustainable relationships within the community and facilitate advice sharing, social integration, and intergenerational communication. These activities aim to improve young unhoused LGBTQ women's feelings of self-efficacy, support, and social integration and help them navigate the existing resources available to them.

### **Objective 2: Promote Psychological and Physical Safety**

& Every Woman's second objective aims to improve perceptions of physical and psychological safety among sheltered LGTBQ young adult women. Unsafe shelter conditions include discrimination, harassment, and violence, which negatively impact the mental health of the target population (DeChants et al., 2021). These environmental conditions alienate LGTBQ women from the shelter environment, further contributing to housing instability and compounding poor mental health outcomes.

& Every Woman employs two best practice interventions associated with reduced rates of discrimination and victimization to improve psychological and physical safety at two low-barrier shelters: (1) providing sensitivity trainings in partnership with Whitman-Walker, a local LGBTQ health clinic and resource center; and (2) offering bystander-based violence prevention training in partnership with Collective Action of Safe Spaces, a local DC organization that uses public education to build community safety (Bush et al., 2019; Yu et al., 2023). This workshop equips both staff and residents with tools to prevent and intervene in instances of harassment and assault. The training encourages personal reflection, outlines resources and support, and includes scenarios for knowledge application.

### **Objective 3: Policy Advocacy**

& Every Woman aims to support the District of Columbia Interagency Council on Homelessness (ICH) by advocating for the inclusion of at least three policies in the next ICH Strategic Plan 2026 –2031, which will address systemic barriers of access to services for LGBTQ adult women aged 18–24.

To achieve this, the intervention will undertake a stakeholder mapping of organizations working with homeless LGBTQ

adult women and develop an advocacy brief for the ICH to carry out a comprehensive needs assessment. The needs assessment will inform policy intervention areas to address systemic barriers to access or use of services, specifically for mental health.

Second, the intervention will provide to the ICH a cost-effectiveness analysis with policy options for the rollout of an electronic case management system to address remaining gaps in coordination between government agencies, shelters, and the DC Department of Behavioral Health. The analysis will include considerations for data security and capturing disaggregated data on gender and sexual orientation.

### **Potential Challenges and Solutions**

The team considered several possible implementation challenges. First, there are potential difficulties securing key partnerships with policy makers and other organizations, as well as engaging the target audience with intended activities such as the Discord Community Resource or the bystander workshops. In addition, securing political commitment and long-term funding may also pose challenges to the successful implementation of the program. Solutions entailed adapting the interventions to maximize desirability and feasibility based on stakeholder feedback, as well as carefully selecting committed partners, including policy partners.

### **Sustainability and Conclusion**

& Every Woman aims to address critical structural factors that impede the target population's ability to overcome mental health struggles and transition to stable housing. These factors include the social conditions at the shelters, as well as the coordination challenges in the case management system that affects individuals' ability to exit out of the shelter into stable housing. Addressing these structural issues will have long-term positive impacts for homeless LGBTQ adult women.

The high rates of homelessness among LGBTQ individuals, coupled with the specific vulnerabilities of young adult women, underscore the urgency and significance of this program. By focusing on increasing resource knowledge and usage, promoting psychological and physical safety, and advocating for supportive policies, the program aims to alleviate immediate mental health concerns and contribute to the long-term well-being and stability of LGBTQ young adult women experiencing homelessness in DC.

### **Georgetown University: DC HEAL (Health Equity and Legal Advocacy)**

Team members: Ayomide Aduloju, Erica Kim, Shereika Mills, Salvatore Sulimay, Nicole Vernot-Jonas, and Allison Willett

Summary prepared by: Ayomide Aduloju, Erica Kim, Shereika Mills, Salvatore Sulimay, Nicole Vernot-Jonas, and Allison Willett  
Faculty advisor: Anne Rosenwald

**Problem and Proposed Solution**

Housing and health outcomes are inextricably linked, and access to stable housing is a key social determinant of health (NHCHC, 2019). Housing insecurity among women in DC is a major issue, and something must be done. The team’s solution: a mobile medical–legal partnership (MLP) called DC HEAL (Health Equity and Legal Advocacy). MLPs integrate legal services in health care delivery systems to address upstream factors, such as housing insecurity, that

lead to poor health outcomes (Tobin-Tyler and Teitelbaum, 2019). MLPs have been shown to improve patient health outcomes, including mental health; increase access to legal services; improve well-being; reduce stress; increase access to stable, quality, and affordable housing; and enhance understanding of necessary policy improvements (see *Figure 1*) (Davis et al., 2022; Regenstei et al., 2017; Tobin-Tyler and Teitelbaum, 2019). DC HEAL brings these services directly to the women who need them by incorporating this model into a mobile clinic. DC HEAL targets three key health determinants for homeless women in DC: health care access, stable housing, and policy and law. The intervention uses the SEM as a framework (see *Figure 2*). Starting at the outermost level of the SEM, the public policy level, DC HEAL works to



**FIGURE 1 |** Solution: A Mobile Medical–Legal Partnership  
**SOURCE:** Developed by Georgetown University authors.



**FIGURE 2 |** The Social Ecological Model  
**SOURCE:** Developed by Georgetown University authors.



improve the health of homeless women in DC by working to ensure the basic need of affordable, stable housing. The mobile MLP will provide legal counsel and advocate for equitable housing and health-related policy. At the community level, the intervention aims to foster partnerships among local community organizations that provide health services and products to the target population to maximize collective reach and work toward a common goal. Finally, at the individual level, DC HEAL will work to improve health literacy and support healthy practices through an educational brochure and individualized legal counseling.

**Medical Intervention**

The medical arm of the mobile MLP will focus on behavioral health services, including mental health, substance abuse disorders, and sexual and reproductive health. In the mobile clinic, the behavioral health specialist will employ the evidence-based method known as the Screening, Brief Intervention, and Referral to Treatment approach to identify, reduce, and prevent drug use and substance abuse or dependence (SAMHSA, 2022). The patients will be referred to DC HEAL’s community partners, such as the DC Department of Behavioral Health, based on their unique needs. To address sexual and reproductive health, DC HEAL will register as a distribution site with DC Free Condoms and provide free contraceptives during visits (see Figure 3). Point-of-Care STD testing with free testing kits from GetCheckedDC will also be offered. Finally, partnerships will be developed with the Greater DC Diaper Bank and I Support The Girls to provide free menstrual products to patients.

**Legal Intervention**

Aligned with the SEM and the housing first approach, DC HEAL’s legal division will provide immediate legal support

for housing-related issues through application assistance, consultations and referrals, and partnerships. The intervention will foster partnerships through collaborative relationships with legal clinics and law firms within the DC area and bring these resources directly to the community. The intervention will leverage local law school alumni networks to encourage pro bono housing-related legal assistance. These partnerships will be formalized through memoranda of understanding that provide a structured framework for mutual support and resource sharing. On-site attorneys will provide 20-minute consultation and referral sessions to identify legal issues, inform clients of their housing-related rights, and offer referrals to partner attorneys or other support services within the intervention (see Figure 4). One of the main services offered will be application assistance to allow clients to access available social support services. Clients can expect support with applications for identification cards, birth certificates, and library cards. For clients who already have these documents, DC HEAL will provide support for transitional housing applications, Medicaid, and other housing or health-related social services. These applications will be routed through partnerships with legal clinics and will support clients by performing the necessary follow-ups with government agencies. The team’s research and discussions with legal experts familiar with the unhoused population have highlighted two primary barriers when offering free legal services: the perception that free legal assistance is not effective nor helpful and a sense of hopelessness that discourages this demographic from engaging with a legal system that is perceived to have failed them (The DC Consortium of Legal Services Providers, 2016). These issues will be addressed through partnerships with legal clinics that are known and trusted by this population and through promotional messaging that acknowledges difficulties

	<b>Contraception</b>	<b>Government of the District of Columbia</b>	<ul style="list-style-type: none"> <li>- Register to become a distribution site with DC Free Condoms</li> <li>- Provide free products to unhoused population during visits</li> </ul>
	<b>STD Prevention and Testing</b>	<b>Get Checked DC</b>	Point of Care (POC) HIV blood testing offered in mobile clinic
	<b>Menstruation</b>	<b>Greater DC Diaper Bank Whitman-Walker Health I Support the Girls</b>	Free period products, including tampons, sanitary napkins, underwears, panty liners, and reusable pads via local distribution centers

**FIGURE 3 |** Community Partners in Sexual and Reproductive Health  
**SOURCE:** Developed by Georgetown University authors.



**FIGURE 4 |** DC HEAL Legal Intervention  
**SOURCE:** Developed by Georgetown University authors.

and reassures potential clients of DC HEAL’s willingness to provide support throughout the process.

**Policy Intervention**

The team recognizes that to secure sustainable change, there must be a primary focus on housing. DC HEAL will advocate for an increased budget for the Emergency Rental Assistance Program (ERAP), reimplementation of the Rapid Re-housing program with a streamlined and simplified application process, and the ability to use Section 1115 waivers for Medicaid funds to address housing as a health-related social need (CMS, 2022). This aspect of the intervention will be operationalized primarily through social media advocacy to increase awareness of the issue and through lobbying by sending letters to the mayor’s office, and to other policymakers, requesting meetings about these issues. Additionally, DC HEAL is committed to ethical storytelling and will empower members of its target population to share their experiences in a manner that respects their dignity and perspective.

**Potential Barriers and Solutions**

Several barriers need to be addressed to achieve DC HEAL’s mission. Primarily, DC HEAL will manage stakeholders to ensure long-term and sustainable operations by selectively building partnerships with organizations that align with DC HEAL’s mission, investing in a clinical coordinator, and paying key clinical staff (Attipoe-Dorcoo et al., 2020). According to the 2021 Point-in-Time Census Count, Wards 5 and 6 have the highest unsheltered populations of women, including trans women (24 percent and 26 percent, respectively) (TCP, 2021). Thus, efforts will be

focused in these two wards to establish trust and familiarity during the tri-weekly visits while still reaching half of the population of unhoused women in DC. Collaboration with existing organizations that already have relationships with the unhoused population in DC will further bolster the work and influence of DC HEAL.

**Howard University: Reach OUTcomes**

Team members: Bukky Babalola, Carys Carr, Ayomide Ogunsakin, Sommore Robinson, Brooke Solomon, and Alex Wheeler

Summary prepared by: Bukky Babalola, Carys Carr, Ayomide Ogunsakin, Sommore Robinson, Brooke Solomon, and Alex Wheeler

Faculty advisors: Monica Ponder, Pamela Carter-Nolan, Marline Edmond, Briana Jeffreys, and Elaine Meredith

**Author Note**

The authors use “women” to refer to all women including transgender women.

**Problem, Background, and Statement of Need**

In 2022, the United States Department of Housing and Urban Development (HUD) reported that approximately 1,700 more women, including transgender individuals, experienced homelessness in Washington, DC compared to the previous year (HUD, 2022). Additionally, lack of access to quality reproductive health services is a unique challenge for women experiencing homelessness (ACOG, 2013; Career and Recovery Resources, 2021; HUD, 2022). The proposed solution, Reaching Equity Access and Championing Health OUTcomes (REACH OUT), is

designed to close the gap in reproductive health access faced by women experiencing homelessness in DC. REACH OUT is a community-centered and local Historically Black College and University (HBCU) student practitioner-led mobile health clinic and resource network composed of community partners.

### **Intended Outcomes**

The intended purpose of REACH OUT is to deliver equitable reproductive health services to women right where they are and to recommend additional resources that lead toward housing, social services, and retention in health care. The REACH OUT team will provide (1) preventive health screenings; (2) sexually transmitted infection and HIV/AIDS testing; (3) contraception; (4) breast, cervical, and prostate cancer screenings; (5) hormonal management and sperm freezing guidance; (6) prenatal, antenatal, and perinatal health screenings; (7) hypertensive pregnancy disorders treatment; (8) mental health counseling; and (9) employment, translation, and legal services.

### **Goal**

The goal of REACH OUT is to serve 500 individuals per fiscal year and 1,000 individuals through the two-year grant period. The program aims are to (1) provide comprehensive general health screening to 75% of patients; (2) assist patients to complete 50 percent of referrals to the interventions resource network for continued health, legal, or housing care; and (3) provide gender-affirming care to 25 percent of patients who need it.

### **Target Population**

The target population for this program will be women of lower socioeconomic status, with emphasis on historically oppressed communities, including Black, Indigenous, and People of Color; persons with disabilities; women identifying as lesbian, gay, bisexual, transgender, queer or questioning; and older adults. Data show these populations of women are disproportionately affected by the burdens of homelessness such as housing insecurity and instability (Metropolitan Washington Council of Governments, 2023b; NACCHO Voice, 2019; NASEM, 2018). Wards 5, 6, 7, and 8 of DC will be primary service locations as these areas have the highest homelessness prevalence and number of women experiencing reproductive health issues (MMRC, 2021; TCP, n.d.).

### **Underlying Theory and Rationale**

REACH OUT will be guided by the SEM, which emphasizes comprehensive approaches for effective change by considering individual, community, and societal factors

that may influence outcomes (CDC, 2022). This program will emphasize health knowledge about reproductive health practices and services and attitudes toward medical professionals at the individual and interpersonal levels. Institutional and community levels will focus on building relationships with community partners at local levels and engaging local HBCU institutions, thus increasing the commitment to providing support for women experiencing homelessness. Creating policies that promote equitable access to reproductive health services, as well as reducing social stigma and discrimination, will be a priority at the public policy level.

### **Strategy and Mechanism**

The REACH OUT program is designed to address the three levels of prevention. Primary prevention will help preempt disease development in the women served, while secondary prevention will encourage early detection through testing. Tertiary prevention will involve clinical diagnosis and care that reduces complications and improves overall health outcomes.

REACH OUT is intended to be both a physical space for women to receive support and an organizational network that primarily relies on local universities, community organizations, and governmental agencies to subsidize resources, funding, and volunteers. REACH OUT will provide women experiencing homelessness with equitable access to health services and resources by organizing a mobile health clinic. REACH OUT's on-site culturally competent interprofessional team will include a program and outreach coordinator, attending physicians, registered nurses, social workers, translators, and drivers. The mobile health clinic will travel to different homeless shelters in select wards of DC to provide on-site care. Community partners will provide resources such as clinic and housing spaces throughout programming.

Evaluations will occur at six checkpoints across two fiscal years to monitor programming effectiveness and goal attainment. Assessment will also include participant satisfaction, cost-effectiveness, and service impact. Reports will be shared with stakeholders, partnering organizations, and legislative bodies. Feedback and evaluation from the network will inform changes to future programming.

### **Potential Partners**

Partnerships will be of mutual benefit and essential for REACH OUT's programming sustainability and organizational effectiveness. Health care and program evaluations will be sourced from area HBCU staff specializing in medicine, health sciences, public health, social work, and health communications, and will also include input from health



care professionals, faculty, and students from other partner programs. Community collaborators such as N Street Village, the Anacostia River Church, the Pennsylvania Avenue Baptist Church, Smart from the Start, and Calvary Women's Services will provide transitional housing and career services, while also serving as community outreach and mobile clinic sites. The Washington Legal Clinic for the Homeless and an HBCU law school will provide support for patients' legal needs. The DC Department of Health and Human Services will donate supplies such as testing kits and contraceptives while providing pathways to social benefits. The mayor's office could provide support to REACH OUT in its advocacy efforts. Partnering with organizations, universities, and government agencies with community service values and outreach is essential. Financial challenges can be addressed through continued partnerships and obtaining funding from diverse sources. Combining these measures could contribute to the success of REACH OUT.

### **Potential Barriers and Solutions**

The work of establishing a mobile health clinic for homeless women faces multifaceted challenges. Geographical obstacles and the process of building trust among patients can impede accessibility. Securing adequate funding could also threaten sustained programming. However, success can be achieved with a comprehensive and collaborative strategy. Strong partnerships with existing community-trusted organizations located in various wards can facilitate accessibility and patient trust. Health professionals and students trained in cultural competency can also increase patient trust.

### **University of Maryland Baltimore: Women's Wellness on Wheels (WWOW)**

Team members: Byron Cheung, Sara Devaraj, Anika Hamilton, Christina Interrante, Elizabeth McAllister, and Martha Rondon

Summary prepared by: Byron Cheung, Sara Devaraj, Anika Hamilton, Christina Interrante, Elizabeth McAllister, and Martha Rondon

Faculty advisors: Gregory Carey and Rebecca Hall

### **Background**

Homelessness is a considerable health issue. In Washington, DC, homelessness has increased by 11.6 percent over the last year, with the Point-in-Time count tallying over 4,900 homeless individuals in the District (Swenson, 2023). Women comprise 26 percent of the homeless adult population in DC (Greater Washington Community Foundation, n.d.b). And Black adult women make up 75 percent of that group, despite comprising just 52 percent of the total population of

adult women in DC (The Women's Task Force of the District of Columbia ICH, 2017). Domestic violence, mental and physical health problems, and a lack of affordable housing are major risk factors for homelessness (National Alliance to End Homelessness, n.d.). Homelessness can also lead to worse health outcomes (The Women's Task Force of the District of Columbia ICH, 2017).

Homelessness can precipitate and even exacerbate mental health conditions due to the trauma and significant challenges of housing insecurity (The Women's Task Force of the District of Columbia ICH, 2017). According to Young and Warren (2020), 80 percent of individuals experiencing homelessness have been diagnosed with a mental health condition.

People who experience homelessness need to be treated with kindness and dignity (Richards, 2022). Dignity can become a bedrock for self-worth; generally when dignity is taken away, individuals' mental well-being suffers (Blane, 2022). For this reason, treating individuals with dignity may increase their well-being and health.

Artificial Intelligence (AI) predictive models have shown promise in helping communities and governments nationwide devise comprehensive and sustainable measures to address homelessness (Messier, 2022). Currently, Washington, DC collects information from individuals experiencing homelessness that is then coalesced into the Homeless Management Information System (HMIS), a central database funded by HUD and managed by the Community Partnership for the Prevention of Homelessness in Washington, DC (HUD Exchange, n.d.). HMIS data is primarily used to inform strategic level decisions and policymaking while not taking real-time data into account (Interagency Council on Homelessness, 2019). Innovative methods are on the horizon; George Mason University has been developing AI machine learning algorithmic techniques (Kube et al., 2023). In summation, this challenge necessitates a public health intervention that incorporates aspects of social justice, dignity services, and innovative data collection methods.

### **Specific Problem**

As homelessness is a considerable issue in DC, there is a need to develop effective and innovative solutions to meet the specific health needs of women impacted by homelessness in the District.

### **Statement of Need**

Unhoused women in DC need a safe space, services that are free of stigma and discrimination, services that address health and wellness, and enhanced data collection to inform programming.

**Goal**

The mobile health intervention Women's Wellness on Wheels (WWOW) consists of three components: person-centered wellness, dignity services, and AI-driven data analysis. This intervention seeks to address women's mental well-being, provide dignity services, and continuously assess effectiveness through AI data analytics. Ultimately, WWOW aims to assist in the connection of the target population with housing services and other integral services.

**Intended Outcomes**

The person-centered wellness facet of the intervention intends to connect the target population with mental health services. WWOW's dignity services component will address potential hygiene barriers and acknowledge the cultural significance of hair care among Black women especially. The integration of AI in data collection will bolster the sustainability and effectiveness of the intervention.

**Intervention**

WWOW adopts the World Health Organization (WHO) definition of health (i.e., health is not just physical health but also encompasses physical, mental, and social well-being); this recognition drives the multifaceted nature of the intervention (WHO, n.d.). To ensure the comprehensiveness of the intervention, the SEM framework was employed (CDC, 2022). These are the overall frameworks used; more specific frameworks were incorporated in various intervention components as well.

The first component of the mobile health intervention, person-centered wellness, would provide a trauma-informed approach (SAMHSA, 2023b). Also, the use of a peer-recovery coach would employ a harm reduction framework (SAMHSA, 2023a). The second component of the intervention, dignity services, incorporates the WHO definition of health by uplifting the social well-being of Black women who are disproportionately impacted by homelessness (The Women's Task Force of the District of Columbia ICH, 2017; WHO, n.d.). The dignity services component of the intervention was also inspired by the Creating a Respectful and Open World for Natural Hair (CROWN) Act (CROWN, n.d.). The third component of the intervention, AI-driven data analytics, would allow the project team to track the effectiveness of WWOW services and integrate the data with existing city and community data collection systems (i.e., HMIS data).

Potential partners for WWOW's person-centered wellness intervention include local professional schools that could provide an opportunity for their students to learn from and work with the target population. The team plans on partnering with the See Forever Foundation, whose cosmetology students would provide beauty services.

WWOW will also partner with community organizations in DC that serve people who are homeless (i.e., N Street Village) to better integrate the intervention in the community.

**Potential Barriers and Potential Solutions**

Acknowledging transportation challenges, collaborations with local shelters and community organizations will be developed, establishing strategically located pick-up points for accessible transportation to WWOW and referred clinics. Training will be provided, with an emphasis on eliminating biases and supporting an inclusive environment. The team is committed to preventing data breaches through stringent security measures, including encryption and compliance with privacy regulations.

**American University: Homeless Outreach, Protection, and Empowerment for Women (HOPE)**

Team members: Nai'la-Mareen Morris, Shadan Rahmani, Lindsay Smith, and Matt Sullivan

Summary prepared by: Nai'la-Mareen Morris, Shadan Rahmani, Lindsay Smith, and Matt Sullivan

Faculty advisor: Melissa Hawkins

**Problem Statement and Background**

Homeless Outreach, Protection, and Empowerment for Women (HOPE) is a three-pillar program with the first pillar being a community health worker program. In collaboration with the DC Department of Human Services outreach program, teams of up to six HOPE volunteers will seek out women who are experiencing a housing crisis to distribute resources and information about the support program. Trained team members will also assess if an individual is suffering from mental health or substance abuse issues and whether they need to visit a health clinic for further treatment. HOPE will organize pop-up style events to give women who are at risk or are unhoused resources to improve their situation or prevent homelessness. This will be done by providing feminine hygiene kits, financial assistance, and shuttle services to addiction treatment centers and primary care facilities.

The second pillar is a partnership with law enforcement, which can help improve the volunteers' co-response. HOPE volunteers will conduct ride-alongs with the officers in plain clothes. The goal is to have the DC Metropolitan Police Department (MPD) officers improve their interactions with people experiencing homelessness and gain a better understanding of how to respond. Police officers may not have the skills needed to effectively respond to unhoused individuals who are experiencing a mental health crisis. For instance, based on interviews with MPD officers, they may be unable to assess what the individual may need (Mills, 2023). The intended outcome of the law enforcement

partnership pillar is to mitigate crises, create effective police interactions, improve data collection, and improve law enforcement–community relations.

Policy is the third pillar, which features two areas of focus. One policy strategy is to call for the implementation of additional forms of law enforcement education. The goal is to create a local city educational training program for law enforcement personnel to increase their knowledge about responding to a mental health crisis. Another policy strategy is providing a direct cash transfer to people experiencing homelessness. Canada and US cities such as Boston, MA have implemented such an approach. HOPE plans to implement this policy for families who are experiencing homelessness that have been using the program’s resources for the past year.

### **Objectives**

The overall objective of HOPE is to address mental illness and drug misuse by considering the built environment, local community, and policy-based factors. The population of focus is residents of Wards 5, 7, and 8 because demographically there are higher concentrations of socioeconomic risk factors for mental illness and drug misuse rates. Housing insecurity (due to gentrification), high crime rates, and food insecurity experienced across various ages in a diverse population are some examples of these factors.

### **Outcomes**

Regarding the community health worker program, the intended outcome is to introduce women who are at risk of homelessness to HOPE and resources that increase transportation to local homeless shelters best suited to their needs. For the rapid community response element, the intended outcome is to mitigate the crisis, improve police interactions with people experiencing homelessness, hold law enforcement accountable, and gather data on this matter for future evidence-based interventions. Lastly, the intended outcome of the policy pillar is to (1) create a foundational local educational training program for those in law enforcement to learn about working with people experiencing homelessness; and (2) grant women experiencing homelessness direct cash transfers to address economic needs. Overall, the goal is to ensure each element of HOPE benefits the community it serves and creates a safer environment better suited for maintaining wellness.

### **Evaluation Techniques**

The proposed evaluation consists of a variety of pre-, mid-, and post-assessments formed with the assistance of an evaluation consultant. Ensuring the validity and reliability of each of the pillars of the program will allow for real-time adjustments to emerging issues. For example, surveys from

community partners on the effectiveness of the community health worker program can narrow the types of nonprofits HOPE should align with in the future.

### **Partners**

HOPE will include many partners from the DC area and community in order to implement a group approach and ensure the success of the program. Partners will include local nonprofit organizations, such as Housing Up and Thrive, the Metropolitan Police department, as highlighted in the intervention, and the local DC government. The partnerships will improve sustainability within the program and will allow expansion of the program with government support after the two-year timeline. As the partners are organizations that have an existing relationship with the DC community, they would be able to highlight and bridge gaps between program staff and the community. The goal of the partnerships is to allow for a greater impact within the DC community.

### **Potential Barriers and Solutions**

The HOPE intervention targets women who are experiencing homelessness, therefore the solution needs to be sensitive, taking into consideration the circumstances faced by women in Wards 5, 7 and 8 who are experiencing homelessness. Because the program involves law enforcement, and the African American community has historically had a mistrust of law enforcement, this can present a potential barrier. Members of this community are more likely to have mistrust toward police officers compared to any other group (Alang et al., 2021). Trusted community members will work together with law enforcement to create a safe program. These community members will act as community liaisons. Another challenge to the HOPE intervention program is sustainability. The proposed budget is fairly small in terms of enacting a program over a two-year duration. Because the program also seeks to make a lasting impact in the community over a long period of time, the budget simply will not be sustainable over that time frame. One proposed solution is to apply for and use existing DC government grant programs. These grants will allow for the program to continue after the original budget runs out. With these partnerships with the DC government for future support, there is also hope that the DC government and DC Health will eventually absorb the program to continue it in the years to come. Another barrier or challenge is the insufficient training of college students to serve as liaisons in the program. The potential future integration of the program into the DC government could allow for more training and more experienced professionals to continue the program as well as expand it to other areas in DC.

**George Mason University: Treatment, Education, Support, Housing & Access (TESHA)**

Team members: Bhumi Ashokbhai Patel, Felix Harper, Julia Mandeville, Lemba Priscille Ngana, and Sravya Vunnam  
Summary prepared by: Bhumi Ashokbhai Patel, Felix Harper, Julia Mandeville, Lemba Priscille Ngana, and Sravya Vunnam  
Faculty advisors: Debora Goldberg and Eman Elashkar

**Statement of Need and Goals**

Washington, DC has experienced a notable increase in homelessness, with an 11.6 percent rise between 2022 and 2023 (EOM, 2023). Homelessness is disproportionately experienced by women; Black, Indigenous and People of Color (BIPOC) communities; and persons in the LGBTQIA+ community. A large portion of people experiencing homelessness in DC are Black (87 percent), and over 40 percent of unhoused youth identify as LGBTQIA+ (Friendship Place, n.d.; Greater Washington Community Foundation, n.d.a). TESHA (Treatment, Education, Support, Housing & Access) aims to address these challenges and to reduce homelessness and the risk of homelessness through a multipronged approach. The approach includes these four pillars: (1) Housing First, (2) Community and Mental Health Support, (3) TESHA Mobile Application (see Figure 5), and (4) Anti-stigma Campaign. The proposed pilot intervention seeks to reduce systemic inequities in resource accessibility among vulnerable populations. The primary objectives include efforts to streamline and centralize available resources, improve the health and well-being of single women (including transgender women) experiencing homelessness currently situated in Ward 2, and provide safe and stable housing among the pilot population by 2025.

**Intended Outcomes**

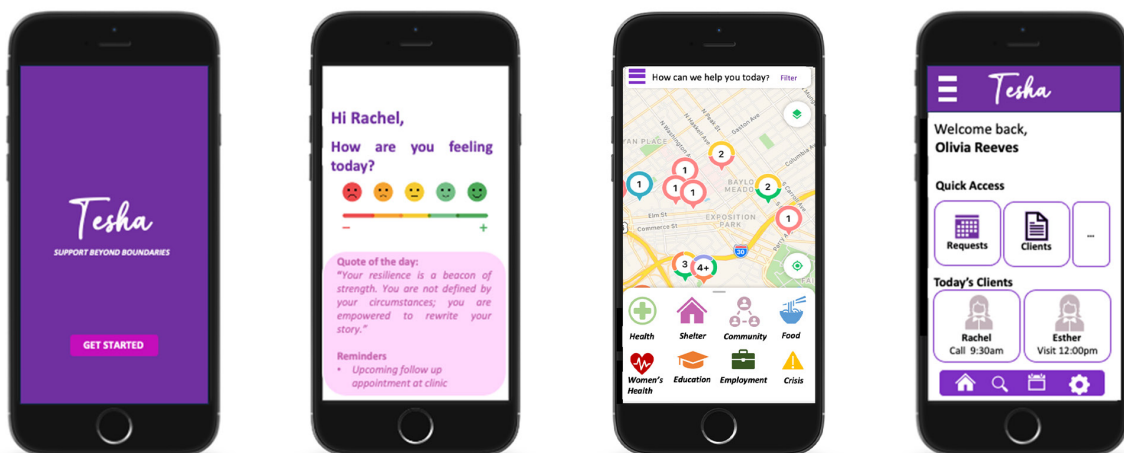
TESHA anticipates significant outcomes, including improved mental health, increased accessibility to women’s health services, high user satisfaction with the TESHA mobile application, and the provision of safe and stable housing for the client population. The program also expects a reduction in stigma experiences. Evaluation of program outcomes will be conducted, and findings will be published and submitted to local and federal funders for extension and expansion of the intervention into other wards in DC.

**Intervention Target Population**

The proposed TESHA pilot intervention seeks to enroll 30 clients, which include single women aged 18–35 (including transgender women) currently situated in Ward 2. More specifically, the intervention will focus on LGBTQIA+ populations and individuals who identify as Black or African American who are homeless or at risk of homelessness.

**Intervention Mechanism**

The TESHA intervention is based on cost-effective and evidence-based approaches that include housing assistance, community and mental health support, mobile applications, and anti-stigma campaigns (Heaslip et al., 2021; Henderson et al., 2013; Parkes et al., 2019). The proposed intervention aims to contribute to solutions to achieve the goals of Homeward DC 2.0, a strategic plan to end homelessness by the year 2024 through permanent supportive housing. Moreover, TESHA focuses on partnering with a number of organizations in DC that are working toward reducing homelessness and supporting vulnerable populations. This multipronged approach aims to empower vulnerable populations and provide safe and stable housing.



**FIGURE 5 |** Pillar Three – TESHA Application  
**SOURCE:** Developed by George Mason University authors.

### **Pillar One – Housing First**

Assist clients in identifying safe, secure, and affordable housing with the support of key partners (e.g., N Street Village, Everyone Home DC). Clients will be matched with peer navigators for a duration of 12 months. This approach will provide support throughout the transition period of finding a stable accommodation and becoming financially independent.

### **Pillar Two – Community and Mental Health Support**

Provide clients with community and mental health support through the TESHA messaging portal. Clients are matched to peer navigators based on lived experience and severity of need. Peer navigators are required to report client's weekly progress to licensed clinical social workers. Peer navigators will support clients with move-in preparations, accessing care, job search efforts, and other needs.

### **Pillar Three – TESHA Mobile Application**

The mobile application will consist of a directory of women's health providers, employment opportunities, education and training, food banks, emergency contact information, and other resources.

### **Pillar Four – Anti-stigma Campaign**

The program health communicator and marketing consultant will develop anti-stigma materials and strategies and will disseminate materials on different marketing platforms.

### **Potential Barriers and Solutions**

There are several challenges associated with implementing the TESHA approach. First, clients may lack access to charging ports. Second, although in possession of a mobile phone, clients may lack access to the internet. Finally, clients may have privacy concerns when using the application (e.g., doubts about providing personal information). To address these concerns, clients will be provided with directories of nearby facilities or libraries for electricity and internet access. Additionally, end-to-end mobile encryption to ensure data security will be implemented.

### **Uniformed Services University of the Health Sciences: EMPOWER HER**

Team members: Marjorie Brooks, Hyun Lee, Norbert Owusu, Teresa Russell, and Joshua Trowell

Summary prepared by: Marjorie Brooks, Hyun Lee, Norbert Owusu, Teresa Russell, and Joshua Trowell

Faculty advisors: Winnie Gossa and Catherine Witkop

### **Statement of Needs and Goals**

The number of unaccompanied individuals experiencing homelessness increased by 10.2 percent according to the Point-in-Time count, highlighting the demand for

interventions that address the needs of the homeless community, especially homelessness experienced among single women in Ward 6 of Washington, DC (EOM, 2023). Furthermore, unsafe and unsanitary options in regard to menstruation are a major driver for additional support and services for people who experience homelessness and face this unfortunate challenge (Kim, 2021). The EMPOWER HER intervention was designed to address the fundamental barriers experienced by women 18 years and older who are experiencing homelessness in Ward 6 of Washington, DC. This aligns with the overarching goal of the intervention: to provide this population with necessary support and strive for a more equitable society for all women, highlighting their strength and resilience.

### **Intended Outcomes**

EMPOWER HER aims to address problems of inaccessibility of supplies, resources, and education related to menstrual hygiene and management. Proposed solutions include increased availability of menstrual supplies through hygiene packs and product dispensers; expansion of an existing in-shelter medical clinic with the addition of a medical-legal partnership (MLP); and creation of mentorship and training opportunities in the target community.

### **Intervention**

The inputs for this intervention include a thorough, participatory needs assessment to understand the unique challenges of the target community, funding for sustainability and feasibility of interventions, partnerships for amplification of the intervention's impact, and personnel to deliver the intervention. The activities of this intervention will include distribution of resources, dissemination of educational sessions aimed at enhancing health literacy, creation of a mentorship program to foster personal growth and resilience, and bolstering of an existing in-shelter medical clinic with the inclusion of a new MLP. The clinic has the capacity to be expanded with a new nurse practitioner (NP) and an attorney, who will join the practice on-site to address legal issues underlying the social determinants of health (SDOH) impacting the target community members.

### **Application of Frameworks and Rationale**

EMPOWER HER is a multi-level intervention, based on the SEM framework, which informs the belief that sustained and widespread change requires addressing multiple levels of the model simultaneously. At the individual level, hygiene packs will be provided to enable women to manage their menstrual hygiene in the short-term. Hygiene packs will be distributed at N Street Village shelter, as well as through dispensers for those who prefer more privacy. This intervention at the individual level has been successfully



implemented in the United States and globally (Ballard et al., 2021; UNFPA, 2019). At the community level, establishment of mentorship and training programs will uplift the community and increase sustainability of the program, allowing community members to become involved in creating lasting change. At the organizational level, attorneys will train medical staff to identify needs that do not require attorney expertise to address (Girard et al., 2021). At the policy and systems level, MLP staff and patients will affect long-term change through high-level (local, state, and federal) advocacy (Girard et al., 2021; H.R. Rep. No. 117-403, 2022; Yale Law School, 2023). Much like medical providers who participate in research, attorneys can use a “patients-to-policy” approach by observing patterns of needs in their patients to inform their advocacy targets and by partnering with clinical staff and patients to fight systemic issues contributing to SDOH (Girard et al., 2021; Regenstei et al., 2017).

The outputs, or short-term measurable achievements of the intervention, will include increased resource availability (measured by the number of hygiene packs distributed), improved health literacy regarding menstrual health (measured by the number of sessions and amount of community participation in each), enhanced community buy-in and personal achievement of community members (measured through qualitative interviews to elicit personal stories and testimonials), and decreased medical and legal burden (measured by the number of medical and legal issues addressed) (Regenstei et al., 2017).

The outcomes, or longer-term, higher-level goals of the intervention, will include increased menstrual hygiene and improved self-efficacy, both measured by pre- and post-intervention surveys of the target population taking part in the intervention, and sustainability of the interventions and systemic changes, measured by community and partner organization involvement in intervention activities, legislative changes increasing access to menstrual hygiene products, and grant funding awarded to extend access to the intervention’s MLP (H.R. Rep. No. 117-403, 2022; Yale Law School, 2023).

### **Potential Partners**

N Street Village would be an ideal partner because they are an organization that “supports women experiencing homelessness in Washington, DC by offering a broad spectrum of services, housing, and advocacy in an atmosphere of dignity and respect” (N Street Village, n.d.). Speaking with their staff, the project team learned that they have previous experience with hygiene packs and believe they are a valuable resource for this target population. They also hold health education seminars daily and believe that

the incorporation of topics related to menstrual health and hygiene would be beneficial. The established partnership between N Street Village and the Georgetown Medical Clinic will aid in providing health care.

Expansion of the embedded walk-in clinic at the shelter would provide immediate access to an NP and a social worker. The overarching approach of the clinic would be shared decision-making, so that the patient feels she has control and a voice about her own health, which is especially important for a demographic that too often goes unheard. The NP can educate, counsel, and guide the patient on health care topics important to the patient, such as presenting the basics of hygiene in challenging environments and helping navigate menstrual control, menstrual suppression, and birth control options. If one of the options requires a prescription, the NP can write it. If the patient desires a method that cannot be delivered at the embedded clinic, such as an intrauterine device, the social worker can coordinate an appointment and transportation to a partner location that can perform the procedure. Legal needs would be handled by the newly installed on-site MLP.

A stakeholder interview with Professor Vicki Girard, JD, Cofounder & Faculty Director of the Georgetown Health Justice Alliance (HJA), was completed. Professor Girard, an experienced MLP advocate within a model academic MLP, attested to the feasibility of standing up an MLP focused on the target population within the allotted budget (Vicki Girard, personal communication, September 28, 2023). She provided further insight regarding the scale (number of civil legal needs), budgetary considerations, and scope of work that could be addressed by the proposed MLP (Vicki Girard, personal communication, September 28, 2023). She also offered support from the Georgetown HJA in the creation of this new MLP in the form of consultation and guidance throughout the education and training processes associated with MLP operations (Girard, personal communication, September 28, 2023).

### **Potential Barriers and Responses**

Achieving the full aims of this project could be limited by community engagement, inadequate funding for sustained intervention efforts, and slow uptake of legislative changes. Potential responses might include intensifying community outreach efforts, securing diversified funding sources, and implementing advocacy strategies to garner additional support.

Overall, the SEM framework intricately weaves together the essential elements of the project, providing structure for both implementation and assessment, with the goal of creating a lasting and meaningful impact on the target community.

## Conclusion

### Reflections

The solutions presented by competing teams in 2023 revealed several recurring themes and also showcased the diverse approaches applied to each theme. Notably, several teams opted to utilize a mobile clinic model to deliver essential services to communities and shelters, demonstrating a common strategy, and several also identified medical–legal partnerships as a key approach. It was encouraging to observe the continued emphasis on cross-sector partnerships and community engagement in solution development, a practice consistent with previous years. Moreover, most proposed strategies integrated evidence-based interventions with innovative approaches or reimaged existing methods. Additionally, some solutions effectively capitalized on existing resources by establishing partnerships with organizations already operating in the community. Nevertheless, the judges' inquiries and remarks emphasized that not all teams thoroughly considered the process of collaborating with other programs and organizations, nor did they all address whether such collaborations already existed and, if so, how they were structured. Furthermore, the judges encouraged teams to focus on quality over quantity, emphasizing the importance of providing more detailed descriptions and considering factors such as cost and sustainability. Some solutions or elements within them were overly generalized and lacked approaches tailored for the DC community. Several teams increased their solution's suitability and feasibility by speaking with DC stakeholders and community members, and using what they learned to tailor their interventions, making their solutions very applicable to the DC community. Additionally, both the presentations from the teams and the questions from the judges underscored the notion that addressing the surface or immediate aspects of homelessness alone is insufficient to tackle the root causes of the issue. Social and environmental factors, including access to housing, were deemed equally critical. As multiple teams highlighted, while the District of Columbia has numerous programs, organizations, and resources, comprehensive and collaborative approaches are needed to address underlying drivers, with necessary changes in policy.

### Future Plans

The Case Challenge is a way to link the work and presence of the National Academies' Health and Medicine Division (HMD) and NAM with both university students and the Washington, DC community. The NAM and HMD are committed to continuing this activity with the 2024 DC Public Health Case Challenge, which will be hosted by

the HMD Roundtable on Population Health Improvement, with the support of the NAM's Kellogg Health of the Public Fund and involvement from other National Academies groups, including the Global Forum on Innovation in Health Professional Education. HMD and NAM staff continue to look for new ways to further involve and create partnerships with the next generation of leaders in health care and public health and the local Washington, DC community through the Case Challenge.

Case Challenge organizers will continue to provide information about the ecological model and upstream factors that affect health in the case document sent to the competing teams (IOM, 2003). This will help teams prepare for the event and encourage them to utilize these key dimensions in their solutions. Organizers will hold a webinar before the case is released to the competing teams to provide a primer on evidence-based policy solutions for public health issues (in 2023, an overview was provided to the students by Alina Baciu, MPH, PhD, Senior Program Officer and Director of the Roundtable on Population Health and Public Health improvement at the National Academies). The webinar orients students to the Case Challenge, reviews best practices developed over the years, and then holds a question-and-answer period. The webinar is recorded so that students have future access to it.

The organizers also hope to engage the competing teams and relevant DC stakeholders after the event to further explore solutions to the complex issues presented in the Case Challenge.

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## Author Information

**Amy Geller** and **Alina Baciu** are senior program officers at the National Academies of Sciences, Engineering, and Medicine (National Academies). **Maggie Anderson** is a Research Assistant at the National Academies. The following authors were participants of the 2023 DC Public Health Case Challenge. At the time of the event, all participants were current students. **Ayomide Aduloju** is a student at Georgetown University. **Bhumi Ashokbhai Patel** is a student at George Mason University. **Bukky Babalola** is a student at Howard University. **Shawn Bayrd** is a student at George Washington University. **Marjorie Brooks** is a student at Uniformed Services University. **Carys Carr** is a student at Howard University. **Byron Cheung** is a student at University of Maryland Baltimore. **Sara Devaraj** is a student at University of Maryland Baltimore. **Fatima Elgarguri** is a student at George Washington University. **Anika Hamilton** is a student at University of Maryland Baltimore. **Felix Harper** is a student at George Mason University. **Anna Hochberg** is a student at George Washington University. **Christina Interrante** is a student at University of Maryland Baltimore.



**Nick Jennings** is a student at George Washington University. **Erica Kim** is a student at Georgetown University. **Hyun Lee** is a student at Uniformed Services University. **Julia Mandeville** is a student at George Mason University. **Elizabeth McAllister** is a student at University of Maryland Baltimore. **Shereika Mills** is a student at Georgetown University. **Nai'la-Mareen Morris** is a student at American University. **Ayomide Ogunsakin** is a student at Howard University. **Norbert Owusu** is a student at Uniformed Services University. **Wendy Post** is a student at George Washington University. **Lemba Priscille Ngana** is a student at George Mason University. **Shadan Rahmani** is a student at American University. **Sommere Robinson** is a student at Howard University. **Martha Rondon** is a student at University of Maryland Baltimore. **Teresa Russell** is a student at Uniformed Services University. **Lindsay Smith** is a student at American University. **Brooke Solomon** is a student at Howard University. **Salvatore Sulimay** is a student at Georgetown University. **Matt Sullivan** is a student at American University. **Soukeyna Sylla** is a student at George Washington University. **Joshua Trowell** is a student at Uniformed Services University. **Nicole Vernot-Jonas** is a student at Georgetown University. **Sravya Vunnam** is a student at George Mason University. **Alex Wheeler** is a student at Howard University. **Allison Willett** is a student at Georgetown University.

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- **Grace Arenas, MFA**, development and engagement specialist at Everyone Home DC, a nonprofit organization providing support to people at risk of or experiencing homelessness
- **Christa C. Gilliam, MSW, PhD**, associate professor at the Morgan State University School of Social Work in Baltimore
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### Correspondence

Questions or comments should be directed to Amy Geller at [ageller@nas.edu](mailto:ageller@nas.edu).

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