Advancing Health Equity in the US Military

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Abstract

Eliminating health disparities and achieving health equity are central to US national health objectives and the Military Health System's "quadruple aim," which has readiness as its core aim. Because military service members enjoy universal eligibility for health care, it is sometimes assumed that health disparities do not exist in the Department of Defense (DoD). However, while some studies have shown that disparities have been attenuated or eliminated in the DoD, others suggest that significant disparities remain. Reasons these disparities may remain include that universal eligibility for care does not necessarily result in equal to access to care, and that equal access to care does not necessarily result in health equity. Priority groups for DoD health equity research and advocacy efforts should include: racial and ethnic minorities, sexual and gender minorities, women, and enlisted ranks. The DoD can advance health equity by improving data quality, increasing relevant population health research, targeting interventions towards the social determinants of health, improving the health care experience, and integrating DoD health equity efforts with those in the US society at large.

Keywords

health disparities; health equity; military medicine; underserved populations

Cover Page Footnote

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ABSTRACT
Eliminating health disparities and achieving health equity are central to US national health objectives and the Military Health System's "quadruple aim," which has readiness as its core aim. Because military service members enjoy universal eligibility for health care, it is sometimes assumed that health disparities do not exist in the Department of Defense (DoD). However, while some studies have shown that disparities have been attenuated or eliminated in the DoD, others suggest that significant disparities remain. Reasons these disparities may remain include that universal eligibility for care does not necessarily result in equal to access to care, and that equal access to care does not necessarily result in health equity. Priority groups for DoD health equity research and advocacy efforts should include: racial and ethnic minorities, sexual and gender minorities, women, and enlisted ranks. The DoD can advance health equity by improving data quality, increasing relevant population health research, targeting interventions towards the social determinants of health, improving the health care experience, and integrating DoD health equity efforts with those in the US society at large.

Keywords: health disparities; health equity; military medicine; underserved populations

INTRODUCTION

What are health equity and health disparities, and why are they important?

The US Department of Health and Human Services (DHHS) has embraced eliminating health disparities and achieving health equity as foundational principles of its national objectives in Healthy People 2030 (Office of Disease Prevention and Health Promotion). It defines health equity as "attainment of the highest level of health for all people…with focused and ongoing societal efforts to address avoidable inequalities, historical and contemporary injustices, and the elimination of health and health care disparities." It defines health disparities as: "a particular type of health difference that is closely linked with …characteristics historically linked to discrimination or exclusion." Health equity can be thought of as the achievement of social justice in health, whereas health disparities are metrics used to measure progress towards health equity (Braveman, 2014). The characteristic which distinguishes disparities and inequities from simple differences is that they are avoidable, unnecessary, and unjust (Whitehead, 1992). This paper explains the importance of health equity to the US military, identifies and justifies priority populations for DoD health equity efforts, and outlines a strategy for DoD research and advocacy efforts to promote health equity and eliminate health disparities.

Why is health equity important to the US military?

The US Department of Defense (DoD), as part of congressionally-directed efforts to reform the military health system (MHS), has embarked upon initiatives to optimize delivery of the "quadruple aim," which includes improved readiness, better health, better care, and lower cost (Smith et al., 2017). While achieving health equity is not an explicit aim, it is inherent in each of the stated aims. To achieve optimal care and health, increase value through the reduction of unwanted variation in health care cost, and maximize readiness for deployment, disparities—which by definition are avoidable and unnecessary—must be eliminated. Some have argued that addressing disparities cannot be addressed without increasing cost—the so-called "equity-efficiency tradeoff (Reidpath et al., 2012)." However, this argument presupposes that equity is not itself a primary outcome of interest in efficiency assessments. We argue that equity is a desirable outcome and that efficiency of alternative interventions should be assessed on several domains of outcomes, including equity. Finally, while health disparities are objectionable in and of themselves, they are also unacceptable because they pose a serious threat to the ability of the MHS to maintain a medically ready force, which is critical to national security.

How is it possible for health disparities to exist in the US military?

It is often assumed that health disparities do not or cannot exist in the DoD because: 1) military service members and their family members enjoy the benefit of universal eligibility for health care, and 2) because the DoD exists within a federal structure that provides legal protections and accountability for any discriminatory activities. Indeed, some studies have found equivalent outcomes by race and gender, including: outcomes after coronary artery bypass grafting (CABG) and other surgical procedures (Chaudhary et al., 2019), cancer treatment (Gill et al., 2014), and mental health care treatment (Goldberg et al., 2020). These findings have led some to conclude that the MHS has minimized disparities in health care access, outcomes, and treatment (Bagchi et al., 2009; Levins; Pierre-Louis et al., 2015). However, other studies have found widely discrepant

outcomes, such as racial and ethnic disparities in chronic diseases, to include hypertension, type 2 diabetes, dyslipidemia, and asthma (Hatzfeld et al., 2012), as well as rates of prenatal care, small for gestational age, caesarian births, late stage breast cancer diagnosis, and dental caries (Harris, 2011). Recently, Young and colleagues found racial and ethnic disparities in coronavirus disease 2019 (COVID-19) infection and hospitalization in the US military despite universal eligibility for health care, similar rates of testing, and adjustment for comorbidities and other confounding variables such as rank and occupation (Young et al.). These studies suggest that while eligibility for care can attenuate or even eliminate some disparities, there are other factors that allow disparities to persist among military populations.

Several explanations have been advanced for why disparities exist in the military despite universal eligibility for health care (Harris, 2011). First, *equal eligibility for care does not necessarily result in equal to access to care*. That is, despite equal eligibility for care, certain populations may have more difficulty with access to care due to lower levels of health literacy, lower levels of trust with the health care system, or higher barriers to care in navigating the military environment and its health system. These barriers include unavailability of services, lack of confidentiality, stigma, and other system level factors, which may result in systematic and structural inequities in access to care. Examples of barriers which limit some or all levels of care at some locations to enlisted service members, women, and transgender service members are described in subsequent sections. Unconscious bias among providers and other health care workers may also result in barriers to care among underrepresented populations, which may be exacerbated by the underrepresentation of these populations in the health care professions (Harris et al., 2012). Second, *even if equal access to care were to be achieved, this would not necessarily result in health equity*. The most straightforward explanation for how this may occur is through disparities that develop and exist prior to entry into military service which then continue during military service. An example of this is the disparity of higher rates of tuberculosis among non-US born individuals, which is largely attributable to infection prior to entering the military rather than transmission during their military service (Mancuso et al., 2010), despite equal and even increased access to tuberculosis care. Another explanation is that many inequities are not primarily driven by access to the healthcare system, but rather by societal, behavioral, or other mechanisms. An example of this is the higher rate of HIV transmission during military service among male service members who have sex with men, which is heavily influenced by factors outside of the healthcare system. However, as noted above, health care system factors may also play a role in contributing to HIV transmission in this priority population through barriers to effective preventive interventions such as pre-exposure prophylaxis and harm reduction (Blaylock et al., 2018).

What are the priority populations for health equity efforts in the DoD?

Although efforts at addressing health disparities and inequities can include many groups, their importance and impact among certain socially disadvantaged groups is increased because of their foundation in social justice (Braveman, 2014). We briefly review and summarize the historical military experience of several of these groups and reasons for considering them priority populations for military health equity efforts.

Ethnic and Racial Minority Groups. Various forms of health disparities and inequities between Black and White persons in the US have existed since the very first settlers arrived in

Jamestown, through generations experiencing the eras of slavery, to Jim Crow and segregation, and on to the present (Thomas & Casper, 2019). Racial and ethnic minorities in the US still face violence, discrimination, and institutional barriers to equal participation in society (American Civil Liberties Union). In 1985, the Secretary of the Department of Health and Human Services (HHS), Margaret M. Heckler, commissioned a Task Force on Black and Minority Health, resulting in the first report which described the deleterious effects of the "continuing disparity in the burden of death and illness experienced by Blacks and other minority Americans as compared with our nation's population as a whole"(Heckler, 1985). The IOM's 2003 report, *Unequal Treatment: Confronting Racial and Ethnic Disparities in Health Care*, provided further evidence on the persistence of racial disparities despite equal access to care, similar socioeconomic conditions and other social determinants of health, and interventions to eliminate disparities (Institute of Medicine, 2003). Similarly, disparities among Indigenous Peoples, such as American Indians, have existed since the arrival of the colonists (Jones, 2006).

While the experience of racism and discrimination in the US military generally mirrors that of US society, the US military has its own troubling history with segregation, discrimination, and denial of veterans' benefits (Defense Equal Opportunity Management Institute, 2002). The last military units were desegregated after the Korean War in 1954, but nevertheless racial disparities continued to be evident during the Vietnam War, with Blacks having a lower proportion of military leadership opportunities but a higher proportion of high-risk assignments and deaths (Defense Equal Opportunity Management Institute, 2002). The DoD established the Defense Equal Opportunity Management Institute (DEOMI) in the 1970s to address factors contributing to racial inequities, but these focused on addressing military culture, values, and leadership, rather than health outcomes (DoD Board on Diversity and Inclusion, 2020).

In 2001, the Veterans Administration (VA) established the Center for Health Equity Research and Promotion (CHERP) to advance the quality and equity of health and health care for vulnerable Veteran populations. CHERP established a robust program studying the prevalence of and interventions to reduce racial and ethnic disparities, which has shown significant disparities in many chronic disease outcomes, although results were heterogeneous by outcome (Peterson et al., 2015). In contrast, there has been much less published literature on racial and ethnic disparities in the US military. Like studies from the VA, the existing military studies have found mixed associations between race and ethnicity among different diseases (Bagchi et al., 2009; Harris, 2011; Hatzfeld et al., 2012; Levins; Pierre-Louis et al., 2015). Even fewer studies of Hispanic, Indigenous, Asian, or multi-racial military service members have been conducted.

Women. Protection of women's rights were granted under the Equal Pay Act of 1963 and the Civil Rights Act of 1964, but women still face violence, discrimination, and institutional barriers to equal participation in society (American Civil Liberties Union). While women live longer than men (Zarulli et al., 2021), studies dating back to 1982 have documented gender disparities in health status and health seeking behavior (Verbrugge, 1982). In response, several US federal government offices, committees, and programs have been established to focus on women's health, such as the Offices on Women's Health at HHS and CDC.

Women have increasingly served in the US military since the Revolutionary War, but their service and roles have been restricted and were only expanded in times of great need, such as

during the World Wars, or through congressional mandate after intense political pressure.(Defense Health Board) While health disparities among women in the military are often similar to those found in the general population (Harris, 2011), military service results in additional health care challenges and needs. Furthermore, the piecemeal approach to women's integration and retention in military service also led to the piecemeal development of health care support of women in the military (Defense Health Board). A recent report by the Defense Health Board found that despite DoD acknowledging that female readiness could be increased by addressing gender-specific health issues, its service women are not being given medical care and equipment to support their well-being (Defense Health Board). The report further recommended the establishment of a DoD Office of Women's Health, although eliminating health disparities and advancing health equity were not noted as specific goals (Defense Health Board). Finally, the perspectives above may have largely reflected those of heterosexual, white women, which are often different from those among women who are also of color or who are sexual and gender minorities (SGM). Although intersectionality has been assessed in veterans' studies, it is only now beginning to make its way into the military and societal dialogues (Eichler et al., 2021).

Sexual and Gender Minorities (SGM. SGM include persons who identify as lesbian, gay, bisexual, transgender, queer, as well as those whose sexual orientation and/or gender expression or identity do not clearly conform to established definitions or binaries (LGBTQ+). There has been a long history of criminalization, discrimination, and violence against SGM individuals in the US (Institute of Medicine, 2011). SGMs also continue to experience widespread stigma, discriminatory laws and policies, lack of provider training or knowledge, and systemic barriers to care. For these reasons, SGM individuals experience disparities in many health outcomes such as suicidal ideation and attempt, substance use, and depression, compared to non-SGM counterparts (Institute of Medicine, 2011).

Stigma and discrimination towards SGM individuals have also been present in military policies. Between World War I and World War II, the military attempted to screen and exclude LGBT individuals from service (Drescher, 2015). In 1994, the "Don't Ask, Don't Tell" policy ostensibly lifted the ban on LGB service members; however, if an individual's same-sex sexual practices or behaviors were disclosed or revealed, they were vulnerable to investigation and/or discharge ("Policy concerning homosexuality in the armed forces," 1994). After the repeal of "Don't Ask, Don't Tell" in 2011, LGB service members continued to lack benefits that were provided to their heterosexual peers, such as housing allowances, travel and relocation assistance, and military health insurance (*Public Law 111 - 321 - Don't Ask, Don't Tell Repeal Act of 2010*). In recent years, the discussion has shifted towards transgender persons, who have historically been barred from military service (*Department of Defense Transgender Policy*). In 2016, the policy preventing transgender individuals from openly serving the military was lifted, only to be reinstated with limited exceptions in 2018 and then lifted again in January 2021 (Biden, 2021a, 2021b).

The military has only very recently begun to collect data on the sexual orientation and gender identity of service members, and thus there is a paucity of data on health disparities among SGM individuals in the military. Research among civilians and veterans, as well as limited research among active duty service members (Holloway et al., 2021), indicates that SGM

individuals are at higher risk for both physical (e.g., chronic diseases, high body weight) and mental health (e.g., substance abuse, depression, eating pathology, suicidality) conditions compared to cisgender, heterosexual peers. Importantly, it is not one's SGM identity itself that causes these disparities; rather, disparities result from the confounding effects of stigma, non-acceptance, and persistent economic and healthcare inequities. As a result, there is a compelling need for tailored programs and policies to reduce these disparities and ensure timely, affirming, and ethical care. For instance, men who have sex with men are prescribed 87% of the pre-exposure prophylaxis in the US military, but in order to access this preventive care they still must contend with geographic variation in its availability and the barrier of requiring a subspecialty consult (Blaylock et al., 2018). Given how recent and tumultuous many of these military policy changes have been, as well as the history of negative consequences to the careers of openly LGBTQ+ service members (Goldbach & Castro, 2016), mistrust remains a salient issue in patient-provider interactions. In addition, likely a result of these previous policies, many military healthcare providers lack adequate training in SGM-related healthcare issues and culturally responsive approaches (Klein et al., 2018; Rerucha et al., 2018; Schvey et al., 2017).

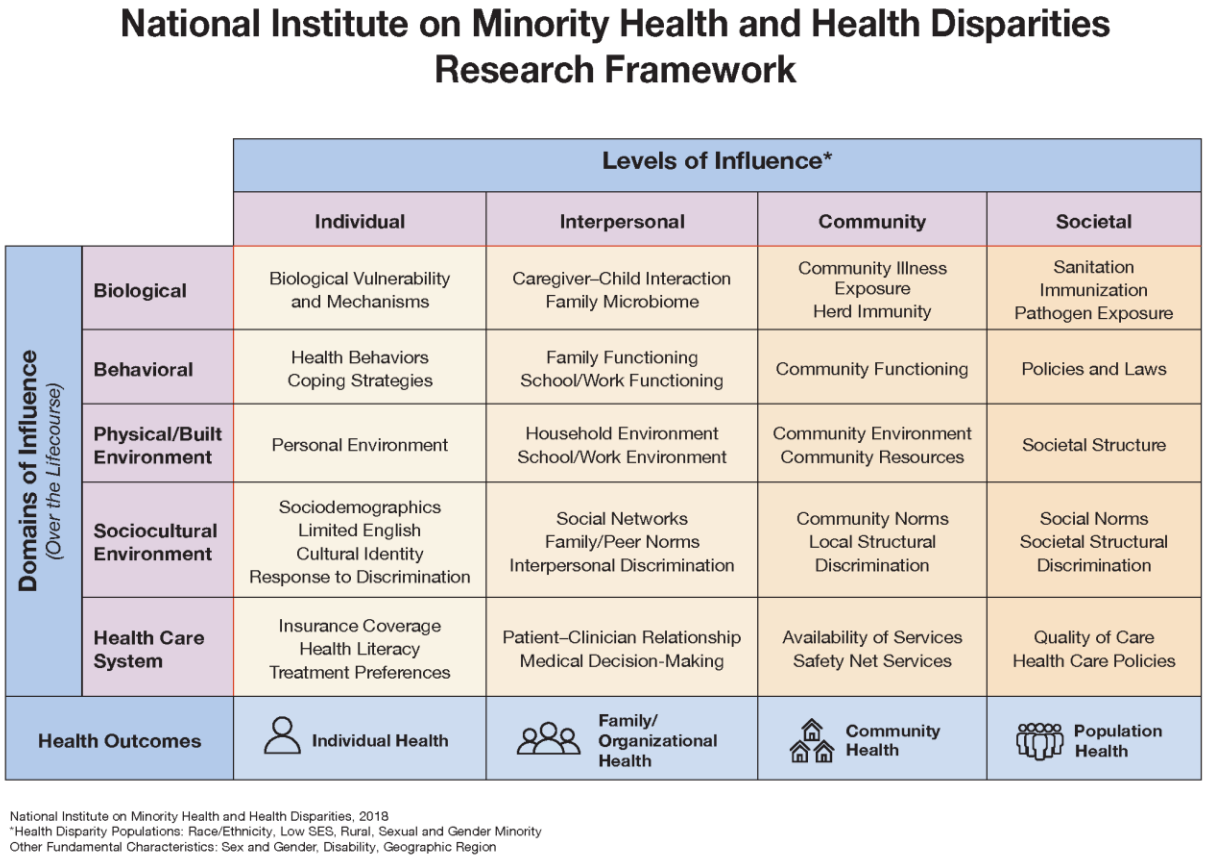
Enlisted Ranks. Military rank is a surrogate for socioeconomic status (SES), which is a well-established determinant of health and health disparities in the US. Enlisted service members (SMs) constitute 83% of the active component force and typically execute the day-to-day business of the military (Military OneSource). Enlisted rank is associated with lower income and educational attainment, racial and ethnic minorities, and male sex. All of these characteristics have been associated with limited health literacy (LHL) (Berkman et al., 2011), which is defined as a limited ability to obtain, process, and understand basic health information and services needed to make appropriate health decisions (Kutner et al., 2006). LHL is associated with poor health outcomes and contributes to health disparities. Furthermore, while the military hierarchical rank structure is integral to discipline, mission execution, and success, it also results in reduced personal autonomy and control among enlisted SMs.

For these reasons, enlisted SMs may struggle with barriers to accessing care based on work demands, a lack of autonomy in the system, and disparities in care due to their limited experience, knowledge, and understanding of health and the healthcare system. Although health care system factors which enlisted SMs encounter have not been studied, they may include being assigned remote locations with poor health care availability, being assigned health care providers with lower levels of training, and having to obtain subspecialty consultation for services often provided in primary care settings by civilian providers. Racial and ethnic minorities are also overrepresented among enlisted SMs (Military OneSource). Among US military veterans, officers have better health than their enlisted counterparts, even after adjusting for education and income (Maclean & Edwards, 2010). Enlisted SMs are more likely to be exposed to occupational hazards which may result in long-term illnesses (McCabe et al., 2020), including a higher likelihood and intensity of combat exposures. The 2015 Department of Defense Health Related Behaviors Survey found that enlisted SMs were at higher risk for negative health behaviors than officers in nearly every health behavior category, including higher usage rates of all forms of tobacco, sexual behaviors, and alcohol use (Meadows et al., 2018), likely largely due to lower SES, lower education levels, and other related factors.

How can the military best advance health equity?

The National Institute on Minority Health and Health Disparities (NIMHD) framework for disparities research (Figure 1) reflects a holistic view of the domains of influence on health disparities, as well as the multiple levels at which these domains are influenced (National Institute on Minority Health and Health Disparities). The DoD can easily adapt this framework to target interventions at all levels and domains. In fact, the DoD's increased level of control over most of the domains (except biological) could result in much greater effectiveness and efficiency of these interventions than could be achieved in civilian populations. We suggest that the DoD should use this framework to advance health equity in its populations by advocating for and achieving better data, increasing relevant population health research on health disparities, targeting interventions towards the social determinants of health, improving the health care experience for priority populations, and integrating DoD health equity efforts with those in US society at large.

Figure 1. National Institute on Minority Health and Health Disparities Research Framework
(National Institute on Minority Health and Health Disparities)



Advocate for and Achieve Better Data and Population Health Research. The MHS can serve as an excellent source of information on health disparities and health equity because of its large beneficiary population, universal eligibility for care, provision of direct patient care, integrated information systems, and overrepresentation of certain underserved minority populations (Military OneSource). The MHS could be particularly important in assessing disparities in the setting of universal health care coverage, which may be relevant to the implementation of future national health care policies. However, MHS data on disparities are often incomplete and must be strengthened in order to provide greater impact. For example, although the military collects race and ethnicity data on service members upon entry into service, these data may be unreliable for other beneficiaries, such as family members. Additionally, identification of SGM service members is not regularly ascertained by the military. Availability of these data would allow more robust identification of factors to assess the presence of and factors associated with health disparities, which would, in turn assist with the development of interventions to promote health equity.

Target the Social Determinants of Health. The social determinants of health, including policy, system, and environmental factors, have a greater overall impact on population health impact than do biological, individual, or provider level factors (Hall et al., 2016). As a community that retains considerable control over its members due to the requirement for "good order and discipline," the military has the potential to exert more influence on its population through military policies, governance, and culture than does the civilian population. An example of how the military influences these social or structural determinants of health is through the DoD Military Equal Opportunity (MEO) program. It is the mission of the MEO program to "ensure all individuals are provided a full and fair opportunity for employment, career advancement and access to programs without regard to race, color, religion, national origin, disability (physical or mental), gender, age, sexual orientation, genetic information or parental status"(Department of Defense Office of Inspector General). However, the MEO program has focused on employment, leadership, and legal discrimination issues rather than health, and no dedicated office or center exists within the DoD that is dedicated to the study and amelioration of health disparities and the promotion of health equity. Nevertheless, this constitutes an important structural element addressing the social determinants of health and would be a valuable partner and collaborators for DoD health equity efforts.

Improve the Health Care Experience. System factors that may impede health care access despite equal eligibility for care include subtle and complex social and societal interactions which result in distrust in the health care system, delays in care, and culturally inappropriate care (Harris, 2011; Institute of Medicine, 2003). While provider biases about priority populations have not been documented in the MHS (Harris, 2011), there has been little research done in this area (Goldbach & Castro, 2016). Harris suggests that although military providers may acquire skills in cultural competence and cultural humility which can mitigate some health disparities, many unrecognized differences in how providers allocate treatment may persist (Harris, 2011), and that this may be exacerbated by the underrepresentation of minorities among the health care professions (Harris et al., 2012). The MHS should promote further training for providers in health issues important to these priority populations, as well as culturally and linguistically appropriate services and digital

health literacy targeted to improve both health and the health care experience of the populations themselves (Rerucha et al., 2018).

Align and Collaborate with Equity Efforts within US Society. The MHS is an important source of health care provision in the US, as it has a beneficiary population of nearly 10 million, has universal eligibility for care, and exists within a federal structure that provides legal protections and accountability for any discriminatory activities. The US military can, and should, take the steps listed above aimed at the reduction of health disparities and the promotion of health equity. However, the disparities seen among US military service members result from those service members' cumulative health experiences both within the US military and within US society. The US military both draws from and reflects the larger society, and this society arises from a historically unequal system which has disenfranchised different groups. Therefore, most conditions for which US military health disparities exist will require substantial efforts aimed at eliminating the structural inequities in US society which drive many health disparities (Khazanchi et al., 2020). Nevertheless, this does not absolve the US military from responsibility for addressing disparities among its service members and beneficiaries. The US military should both take independent steps to increase health equity within its own community and be a meaningful participant in larger societal health equity efforts.

CONCLUSION

A focus on health equity in the DOD aligns with the MHS quadruple aim, which specifically targets improving the equitable experience of care, enhancing population health, reducing unwanted variation in cost and quality of care, in and improving medical readiness. DoD should use the NIMHD health equity framework to advance health equity in its populations, with specific focus on advocating for and achieving better data, increasing relevant population health research on health disparities, targeting interventions towards the social determinants of health, improving the health care experience for priority populations, and aligning with equity efforts within US society. The Uniformed Services Health Equity Collaboratory (USHEC) at the Uniformed Services University (USU) has recently been established to increase the evidence base, improve collaboration, and promote equity within the MHS (Department of Preventive Medicine and Biostatistics). We intend to do this through internal collaborations, including DoD Health Affairs and the Defense Health Agency, but also through external collaborations with the NIMHD, CHERP, CDC's Office of Minority Health and Health Equity, US Department of Health and Human Services' Office on Women's Health, and others. This paper outlines the focus and methods of our planned research and advocacy efforts, including priority populations and directions for advancing health equity in the DoD. The development of and enforcement of accountability measures should occur in with feedback from these external collaborators; internal DoD stakeholders at the DHA, the military services, and the MEO program; and stakeholders from the priority populations.

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