



# Navigating Complexities in HIV Care: Challenges, Solutions, and Strategies

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## Authors' contributions

This Work was carried out in collaboration among all authors. Author AL designed and conceptualized the study. Author AL collected and analyzed the data. Authors AL and HS wrote the entire manuscript together. Authors CC, KC, GM, PP, HS, AL and NK reviewed the manuscript. All authors read and approved the final manuscript.

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## ABSTRACT

HIV/AIDS remains a persistent global public health challenge, notwithstanding substantial advancements in prevention and treatment. The UNAIDS 95-95-95 targets, aiming for 95% of all individuals with HIV to be aware of their status, 95% of those diagnosed receiving antiretroviral therapy (ART), and 95% of those on ART achieving viral suppression, necessitate overcoming diverse challenges and barriers. This viewpoint examines the multifaceted obstacles impeding HIV care engagement and the care cascade, encompassing issues related to testing, linkage to care, retention in care, and viral suppression. Additionally, potential solutions and strategies are proposed

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to address these challenges and advance towards the Sustainable Development Goal of ending the HIV epidemic by 2030. In conclusion, this viewpoint underscores the intricate challenges inherent in achieving the UNAIDS 95-95-95 targets and progressing towards ending the HIV epidemic by 2030. The exploration of testing, linkage to care, retention in care, and viral suppression reveals a complex web of obstacles that require attention. The suggested solutions and strategies presented in the manuscript highlight a forward-looking approach, providing a roadmap to surmount these challenges. Despite the formidable nature of the task, a concerted effort is essential to realize the goals outlined in the Sustainable Development Agenda. By addressing these challenges head-on, the global community can move closer to ensuring that individuals living with HIV receive optimal care and contribute to the ultimate objective of ending the HIV epidemic.

*Keywords: Care cascade; complexities; engagement; HIV care perspective.*

## 1. INTRODUCTION

HIV/AIDS remains a global health crisis, with approximately 38 million people living with the virus worldwide. In recent years, the UNAIDS 95-95-95 targets have been established to accelerate progress towards ending the HIV epidemic. While these targets have the potential to transform the global response to HIV, substantial challenges and barriers persist in achieving them [1]. This viewpoint aims to shed light on the complexities surrounding HIV care engagement and the care cascade and to propose solutions to overcome these obstacles.

## 2. CHALLENGES IN HIV TESTING

In the realm of HIV testing, gaining insight into one's HIV status and initiating the initial measures for health management are crucial elements facilitated through testing. Despite significant progress in the field and the presence of comprehensive national health programs for HIV/AIDS, numerous regions continue to grapple with insufficient testing rates, primarily attributed to persistent and complex challenges demanding focused attention [2].

**a. Stigma and Discrimination:** A persistent and damaging social stigma attached to HIV continues to be a formidable barrier to testing. Some have also witnessed stigma when visiting healthcare facilities to access HIV-related or general healthcare. The stigma could persist in three forms; internalized, anticipated and enacted. The fear of negative consequences, such as discrimination, ostracism, or a loss of social support, often deters individuals from seeking an HIV test. This stigma can create a climate of silence and secrecy surrounding HIV, making it difficult for those at risk or in need of testing to come forward [3].

**b. Lack of Access:** Accessibility to HIV testing facilities and healthcare services is another major concern, particularly in rural and underserved areas. In these regions, the limited availability of testing centers and healthcare infrastructure restricts the opportunities for individuals to get tested. Non-availability of testing centers near one's locality, discourages individuals to get themselves tested as daily wagers have to bear economic losses for the same. The resulting low testing rates exacerbate the overall HIV burden in these communities, making it challenging to identify cases and link individuals to appropriate care [4].

**c. Testing Modalities:** To overcome the barriers associated with traditional testing methods, there is a growing need for more accessible and user-friendly testing modalities. Initiatives such as self-testing and community-based testing have shown great promise in reaching populations that are often marginalized and under-tested [5]. These approaches empower individuals to take control of their own health by offering them the option to test in the privacy of their own homes or in community settings. Widening the implementation of these innovative testing modalities is vital to ensure that a broader cross-section of society has access to testing and can engage with the care cascade [6].

Addressing these challenges in HIV testing requires a comprehensive approach that not only focuses on improving the availability and accessibility of testing services but also aims to combat the stigma and discrimination that hinders people from taking this crucial first step toward managing their HIV status [7]. It is essential to create an environment where individuals feel safe, supported, and empowered to know their HIV status and access the care they need [8].

### 3. BARRIERS TO LINKAGE TO CARE

Once individuals test positive for HIV, the next essential step is linking them to appropriate care and treatment. However, numerous barriers can hinder this crucial transition, impacting both individual health outcomes and the broader epidemic [9].

**a. Delayed Linkage:** One significant barrier faced by individuals who test positive is delayed linkage to care. The delay in the linkage to appropriate care could be due to individual's own health seeking behavior, stigma associated or due to lacunas in the health systems itself. This delay can lead to a myriad of adverse consequences, including increased morbidity, deteriorated quality of life and the heightened risk of viral transmission [10]. The longer the gap between diagnosis and care initiation, the greater the potential harm to the individual's health, as well as the risk of transmission to others. Reducing these delays is paramount to improving individual health outcomes and preventing further HIV transmission [11].

**b. Sociodemographic Factors:** The sociodemographic factors surrounding an individual can play a substantial role in their ability to successfully link to HIV care. Factors such as poverty, homelessness, and substance abuse can significantly hinder this linkage process. Individuals facing economic hardships or unstable housing may struggle to access the necessary care facilities and support services. Substance abuse issues can exacerbate these challenges, making it even more challenging to engage with care. Despite treatment being available free of cost in public healthcare facilities, still linkage to treatment presents a challenge as there are financial implications when a person has to come over to treatment center for medicines as he/she has to take a loss on their wages (applicable to those who are daily wage earners). To address this, after initial assessment of person's overall health, efforts should be made to deliver the medicines at the infected person's doorstep if he/she is not willing to come over to health facilities due to any reason possible [12].

**c. Mental Health:** Co-occurring mental health issues often go unaddressed and can impede the engagement of individuals in HIV care. Mental health disorders, such as depression or anxiety, can create significant barriers to accessing and adhering to treatment regimens [13]. This can

further compound the complexity of managing HIV and achieving viral suppression.

To overcome these barriers to linkage to care, a holistic approach is essential. This approach involves not only streamlining the process from diagnosis to care initiation but also addressing the social determinants of health that influence an individual's access to care. Implementing strategies to combat poverty, homelessness, and substance abuse, integrating mental health services into HIV care programs and support within the society can help break down these barriers, enabling more individuals to engage with care and successfully manage their HIV infection [14].

### 4. RETENTION IN CARE

Sustaining engagement in HIV care is crucial to achieving positive health outcomes and maintaining viral suppression. However, numerous challenges can undermine retention in care, perpetuating the risk of HIV transmission and disease progression [15].

**a. Socioeconomic Factors:** Socioeconomic hardships, such as unstable housing, unemployment, and financial insecurity, represent significant barriers to retaining individuals in HIV care. The stress and uncertainty associated with these challenges can divert a person's focus away from managing their health, making it difficult to consistently attend medical appointments and adhere to prescribed treatment regimens [16].

**b. Mental Health and Substance Abuse:** The simultaneous presence of mental health issues and substance abuse can significantly contribute to the disengagement from HIV care. When these conditions go unrecognized and unaddressed, they have the potential to disrupt an individual's capacity to adhere to treatment and maintain regular attendance at medical appointments [17]. The challenges associated with managing mental health issues or substance abuse frequently take precedence over the maintenance of HIV care, posing a considerable threat to both individual well-being and public health [18].

**c. Stigma and Discrimination:** The enduring stigma attached to HIV can lead to patients discontinuing care due to fear, shame, or a desire to keep their HIV status hidden. This fear

of discrimination can result in individuals disengaging from care, jeopardizing their own health and the progress of the epidemic. Many a times, healthcare delivery system is itself responsible for making people with HIV (PWH) feel stigmatized. Overcoming stigma and discrimination is pivotal to retaining patients in HIV care and ensuring their overall well-being [19].

Addressing these barriers to retention in HIV care necessitates a comprehensive approach. It requires not only providing medical support but also addressing the broader social determinants of health that influence an individual's ability to sustain care [20]. Efforts should be made to tackle socioeconomic hardships, integrate mental health and substance abuse services into HIV care programs, the healthcare providers should be trained on avoidance of stigma when dealing with HIV infected persons, and to create an environment where individuals feel safe, supported, and encouraged to remain in care, leading to better health outcomes and reduced HIV transmission [21].

## 5. BARRIERS TO ACHIEVING VIRAL SUPPRESSION

The ultimate goal in the HIV care cascade is to achieve viral suppression through antiretroviral therapy (ART). However, numerous challenges can impede this crucial step in managing HIV, potentially leading to poor health outcomes and continued transmission of the virus [22].

**a. Medication Adherence:** Sustained adherence to medication regimens is often challenging for individuals living with HIV. The need for lifelong treatment, coupled with the side effects of ART and inadequate counseling can lead to non-adherence, treatment interruptions, and suboptimal outcomes. Non-adherence increases the risk of viral rebound, progression of the disease, and potential transmission to others. Improving medication adherence is central to achieving viral suppression [23].

**b. Drug Resistance:** The development of drug resistance is a significant concern if ART regimens are not well-tailored or adhered to. This can occur when the virus mutates and becomes less responsive to the medications prescribed. In cases of drug resistance, treatment options may become limited, and more complex, expensive, and less effective regimens may be required to manage the virus [24].

**c. Comorbid Conditions:** Patients with comorbid conditions, such as tuberculosis or other infections, may face additional difficulties in achieving viral suppression. Coexisting health issues can complicate the management of HIV and may require specialized care and coordination to ensure that both the primary HIV infection and the comorbid conditions are effectively treated [25].

To overcome these barriers to achieving viral suppression, a patient-centered approach is crucial. This approach should involve comprehensive healthcare, regular monitoring of medication adherence, and the development of tailored treatment plans. It is essential to provide ongoing support, education, and resources to empower individuals to adhere to their ART regimens and effectively manage comorbid conditions, ultimately leading to viral suppression and improved overall health [26].

## 6. PROPOSED SOLUTIONS AND STRATEGIES

To address the multifaceted challenges within the HIV care cascade, a comprehensive and multi-pronged approach is essential. The following strategies can help overcome these obstacles and improve the overall management of HIV:

**a. Reducing Stigma:** Tailored public health campaigns and education should be utilized to reduce the stigma and discrimination associated with HIV. Healthcare delivery systems should be made more inclusive. By fostering understanding and empathy, individuals are more likely to seek testing and care without the fear of social repercussions. This not only benefits individual health but also helps reduce the overall transmission of the virus [27].

**b. Expanding Access:** To improve access to testing and care, there should be a wider implementation of community-based testing, mobile clinics, and telemedicine. These approaches can reach underserved and remote populations and to all others who need them, making it easier for individuals to access services in their communities [28].

**c. Supportive Services:** Integrating mental health and substance abuse treatment within HIV care settings is crucial. Addressing co-occurring conditions can significantly improve engagement in care. Comprehensive care, which includes both physical and mental health

support, helps individuals better manage their HIV [29].

**d. Social Support:** Providing social programs, housing assistance, and employment support can address socioeconomic factors that disrupt retention in care. By assisting individuals in finding stable housing and employment, they are more likely to remain engaged in care, leading to better health outcomes [30].

**e. Treatment Tailoring:** Personalized treatment plans based on patient needs and preferences can enhance medication adherence and reduce the development of drug resistance. Recognizing that each individual's journey with HIV is unique allows for tailored care that is more effective [31].

**f. Integrated Care:** Combining HIV care with primary healthcare services is another strategy to enhance overall health outcomes. This approach ensures that individuals receive comprehensive healthcare, addressing not only HIV but also other healthcare needs. Integrated care helps to manage comorbid conditions more effectively. As improved treatment adherence will lead to HIV infected population living longer, the emergence of non-communicable diseases presents considerable challenges in management of these comorbidities as they usually take longer to get treated. Hence, integrated care becomes essential to overcome such challenges [32].

By implementing these strategies, it is possible to address the challenges and barriers in the HIV care cascade comprehensively. This can lead to improved outcomes for individuals living with HIV and contribute to the global effort to end the HIV epidemic [33].

## 7. CONCLUSION

The challenges and barriers within the HIV care engagement and care cascade are complex and interwoven, demanding a comprehensive, all-encompassing approach. While strides have been taken in the fight against HIV, there is still substantial work to be done to achieve the ambitious UNAIDS 95-95-95 targets and, ultimately, to bring an end to the HIV epidemic. To reach this goal, it is imperative to address the structural, social, and individual impediments that hinder progress while embracing innovative solutions. Only by tackling these multifaceted challenges head-on can we draw closer to a world where HIV is no longer a global health

crisis, but rather a triumph of public health and human resilience.

## CONSENT

It is not applicable.

## ETHICAL APPROVAL

It is not applicable.

## COMPETING INTERESTS

Authors have declared that no competing interests exist.

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