WHITE PAPER

Clearway Health

Beyond HIV Viral Suppression: The Role of Health System Specialty Pharmacies in Providing Comprehensive Care for People Living with HIV

Introduction

Human immunodeficiency virus (HIV) affects about 1.2 million people in the United States.[1] The cornerstone of HIV management is achieving and maintaining viral suppression. Viral suppression not only improves the health of individuals living with HIV, but also significantly reduces the risk of transmission. HIV management, however, should go beyond viral suppression and provide comprehensive, patient-centered care that empowers individuals living with HIV to lead healthy, fulfilling lives while effectively managing their condition and reducing the transmission of HIV to others. Achieving these goals requires a multidisciplinary approach that involves collaboration between healthcare providers and individuals affected by HIV.

Outlined below are key components of comprehensive HIV management and the role of health system specialty pharmacies in achieving the therapeutic goal.

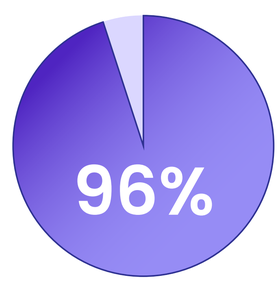
Human immunodeficiency virus (HIV) affects about 1.2 million people in the United States.[1]

Medication Adherence

Adherence to antiretroviral (ART) medications is critical for achieving clinical and patient quality of life outcomes in HIV management. ART consists of a combination of medications that target different stages of the HIV life cycle. Achieving and maintaining at least 90-95% adherence to ART is essential for an optimal clinical outcome.[2,3] However, adherence to ART can be influenced by multiple factors, including complexity of ART regimen and pill burden, ART-related side effects, and individual and socioeconomic status of patients living with HIV (PLHIV).[4] Strategies to improve ART adherence should include patient education and medication access support. Simplifying the ART regimen by transitioning appropriate patients to a single tablet regimen (STR) or long-acting injectable ART is critical to improve adherence and address the stigma associated with HIV.[5] Non-adherence is associated with developing resistance to ARTs.[6]

Viral Suppression

Achieving and maintaining HIV viral suppression is the primary goal of HIV treatment. Viral suppression, defined as reducing the level of HIV in the blood to undetectable levels or less than 200 copies of HIV per milliliter of blood, is associated with better health outcomes, lower risk of transmitting the disease to others and reduced risk of developing drug resistance.[7] Beyond its clinical implications, HIV viral load suppression is one of the key quality indicators of HIV management for health systems.[8] More than 96% of persons living with HIV (PLHIV) enrolled in Clearway Health's specialty care management programs achieve viral load suppression.



96% of patients enrolled in Clearway Health's specialty pharmacy services achieve viral load suppression

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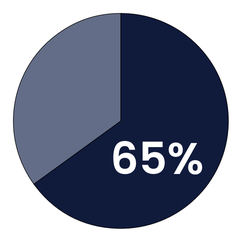
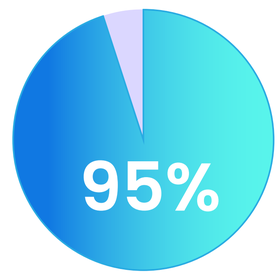


National average



95% of patients enrolled in Clearway Health's specialty pharmacy services achieved CD4+ count > 200 count/mm^3

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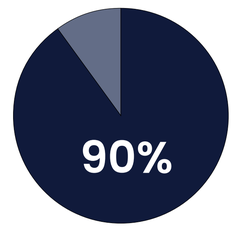

Goal set forth by UNAIDS

Immunological Stability

Preserving and restoring immune function by maintaining or increasing CD4+ T-cell counts is the key goal of HIV management. CD4+ T-cells are a key component of the immune system. HIV weakens the immune system by specifically targeting T-helper cells (CD4 cells) and depleting them. The rate and extent of CD4+ T-cell decline can vary among individuals and is influenced by factors such as viral load and overall health of the individual. Low CD4 counts predisposes PLHIV to a higher risk of opportunistic infections. Although adherence to ART ensures viral suppression and immunological stability, residual chronic immune activation and inflammation may persist, leading to CD4+ T-cell depletion.[9] Hence, irrespective of viral suppression status, periodic monitoring of CD4 levels provides a comprehensive picture of overall disease progression, treatment effectiveness, risk of opportunistic infections and guides clinical interventions.

At Clearway Health, clinical pharmacists routinely monitor both absolute CD4+ and percent CD4+ levels of all enrolled patients on ART. More than 95% of PLHIV enrolled in our specialty care management services have achieved CD4+ level >200 cells/mm^3. CD4+ level less than 200 cells/mm^3, 100 cells/mm^3, and 50 cells/mm^3 are associated with increased risk of common opportunistic infections such as pneumocystis pneumonia (PCP), toxoplasmosis and Mycobacterium avium complex (MAC) respectively. In such situations, Clearway Health clinical pharmacists, under collaborative practice agreements, provide guideline-based prophylactic and therapeutic interventions.

Overall Health Optimization

With the arrival of a new generation of combined ARTs, most PLHIV can live a near-normal life expectancy.[10] However, there are various challenges that impact the overall quality of health for PLHIV. Thus, HIV management must aim to optimize the overall health and well-being of individuals living with HIV by addressing comorbidities, managing symptoms, promoting healthy lifestyles and addressing psychosocial needs. This includes managing chronic conditions such as cardiovascular disease, diabetes and mental health disorders, as well as promoting preventive care and healthy behaviors. In recognition of these needs, a “fourth 90” aiming to ensure that 90% of people with viral suppression have good health-related quality of life was added to the “triple 90” strategic goal HIV management.[11] This strategy aims to scale up the diagnosis rate for 90% of PLHIV to know their status, 90% of all PLHIV diagnosis to have access to ART, 90% of PLHIV to achieve viral suppression, and 90% of people with viral suppression to have a good health related quality of life.

Improving the quality of life of PLHIV includes a comprehensive approach to minimize or eliminate the impact of the disease on their clinical, physical, emotional, social and psychological well-being. This involves providing comprehensive care that addresses the holistic needs of patients, including access to support services, counseling and resources to enhance coping skills and resilience.

UNAIDS 4 global targets for HIV treatment

- **90% of people with viral load suppression have good health related to quality of life**
- **90% of PLHIV know their status**
- **90% on ART achieve viral suppression**
- **90% of PLHIV receive ART**

Reduction of HIV-related Stigma and Discrimination

HIV-related stigma, whether external or internalized, leads to sub-optimal medication and/or visit adherence, higher depression and lower quality of life, which may have negative effects on PLHIV's overall health outcomes.[12,13] Internalized stigma refers to the process where individuals with HIV absorb negative stereotypes and apply those to themselves. This can result in feelings of shame, fear of disclosure, isolation and despair, which may prevent individuals from seeking testing and/or treatment for HIV. For some PLHIV, the daily ART regimen becomes a constant reminder of their HIV status and a contributing factor to internalized HIV-related stigma and medication non-adherence. Considerations for the use of the long-acting ARTs (LA-ARTs) may help to alleviate PLHIV privacy concerns and reduce the constant reminder associated with the daily ART dose, although it may introduce other barriers to therapy.[14] A study that assessed acceptability of LA-ARTs by PLHIV and physicians found the majority of patients and providers favored the use of LA-ARTs in patients with unmet medical needs, sub-optimal medication adherence, confidentiality or privacy concerns and emotional burden of daily ART dosing were interested in LA-ARTs.[15] Another study demonstrated that PLHIV who transitioned to LA-ARTs highlighted both logistical and psychological freedom from internalized stigma among the benefits of transitioning to LA-ARTs.[16] Thus, HIV management should aim to reduce the stigma and discrimination associated with HIV by promoting education, awareness and advocacy efforts that challenge misconceptions and simplify therapeutic regimens.

Cardiovascular Risk Management

PLHIV have an increased risk of cardiovascular disease (CVD) compared to the general population.[17] This could be attributed to the fact that they are experiencing longer life spans leading to age-related diseases, and partly due to HIV related chronic inflammation, immune activation and metabolic changes, such as dyslipidemia, resulting from antiretroviral therapy.[18–20] HIV-related CVD risk is 1.5 -2.0 fold higher in women compared to men.[21] Similarly dyslipidemia is higher among women with HIV.[22] In addition to the traditional risk factor modifications, such as diet, exercise, smoking cessation and blood pressure control, the U.S. Department of Health and Human Services (HHS), American College of Cardiology (ACC), American Heart Association (AHA) and the HIV Medicine Association (HIVMA) have recently recommended the use of statin therapy for primary prevention of atherosclerotic cardiovascular disease (ASCVD) in PLHIV.[23] In a landmark study, the use of statins (Pitavastatin) in PLHIV resulted in a 35% reduction in major adverse cardiac event (MACE) compared to placebo.[24] While statins may have potential benefits for HIV patients beyond cholesterol-lowering effects, their use should be carefully considered and individualized based on the patient's clinical characteristics, potential drug interactions and other risk factors. Below is a summary of the HHS recommendation on the use of statins for primary prevention of ASCVD in PLHIV.

Panel Recommendations

For people with HIV who have low-to-intermediate (<20%) 10-year atherosclerotic cardiovascular disease (ASCVD) risk estimates

Age 40-75 years

When ASCVD risk estimates are 5% to < 20%, the Panel for the Use of Antiretroviral Agents in Adults and Adolescents with HIV (the Panel) recommends initiating at least moderate-intensity statin therapy (AI).

- **Recommended options for moderate-intensity statin therapy include the following:**
  - Pitavastatin 4 mg once daily (AI)
  - Atorvastatin 20 mg once daily (AII)
  - Rosuvastatin 10 mg once daily (AII)

When 10-year ASCVD risk estimates are <5%, the Panel favors initiating at least moderate-intensity statin therapy (CI). The absolute benefit from statin therapy is modest in this population; therefore, the decision to initiate a statin should take into account the presence or absence of HIV-related factors that can increase ASCVD risk.

- **The same options for moderate-intensity statin therapy as recommended for 10-year ASCVD risk estimates of 5% to <20% (see above).**

Age <40 years

Data are insufficient to recommend for or against statin therapy as primary intervention of ASCVD in people age <40 years with HIV. In the general population, lifestyle modifications are recommended for people age <40 years, with statin therapy considered only in select populations (see AHA/ACC/Multisociety Guidelines).

Role of Health System Specialty Pharmacists in Optimizing HIV Care

Health system specialty pharmacists play a crucial role in various aspects of HIV care, contributing to the comprehensive management and improvement of patient outcomes.

Antiretroviral therapy selection

Health system specialty pharmacists are integral members of the care team and support healthcare providers to select appropriate ART regimens based on factors such as treatment history, drug resistance profile, comorbidities, drug interactions and patient and insurance preferences.

Medication access and adherence support

Once appropriate therapy is selected, pharmacy teams help patients navigate insurance coverage, financial assistance programs and other resources to ensure access to affordable HIV medications and services. They advocate for patients' medication needs and provide assistance with prior authorizations, appeals and medication cost management strategies. They work closely with patients to develop individualized adherence strategies and address any barriers to adherence, such as pill burden, side effects or medication interactions.

Patient education and counseling

Patient education on HIV management is essential for empowering individuals living with HIV to understand their condition, engage in their care and make informed decisions. Tailored medication-related information on available therapeutic options, how they work, proper usage, potential side effects, drug interactions and the importance of medication adherence helps patients to understand and engage with their healthcare providers in a meaningful way. Providing patients with clear and accurate information about the disease, including how the virus is transmitted and how it impacts the immune system, lifestyle modifications and self-care and healthy living practices help patients manage their condition effectively and maintain overall health.

Prevention and management of drug interactions

Pharmacists play a critical role in identifying and managing potential drug interactions between ART medications and other medications used by patients for comorbidities or other conditions. They provide guidance on dose adjustments, alternative medications or timing of drug administration to minimize interactions and ensure optimal treatment outcomes.

Adverse drug reaction monitoring and management

ARTs, especially those with protease inhibitors (PIs) and non-nucleoside reverse transcriptase inhibitors (NNRTIs), may induce or inhibit CYP3A4 enzyme activity leading to changes in plasma concentrations of other medications metabolized by CYP3A4. Conversely, other medications that affect the absorption, metabolism, distribution or excretion of ARTs can impact the efficacy and safety of ARTs. Pharmacists conduct a comprehensive medication review to identify potential drug-drug and drug-disease interactions of ARTs. They monitor patients for adverse drug reactions associated with ARTs and provide timely intervention as needed to improve therapeutic outcomes, minimize adverse effects and improve tolerability.

Viral load and CD4+ monitoring

Monitoring viral load and CD4+ T-Cell count are critical components of HIV management to assess disease progression, guide treatment decisions and evaluate the effectiveness of ARTs. Pharmacists assist in monitoring patients' viral loads, interpreting results and coordinating follow-up care with healthcare providers. They help ensure timely adjustments to treatment regimens in response to changes in viral load and collaborate with other members of the healthcare team to optimize patient care.

Management of HIV-related complications and comorbidities

Managing HIV-related complications and comorbidities involves a comprehensive approach that addresses both HIV-specific health issues and other conditions that may arise due to chronic HIV infection or its treatment. Supporting patients through medication therapy management, monitoring for adverse effects and collaborating with other healthcare providers to optimize treatment regimens and improve patient outcomes. Pharmacists play a key role in the prevention and management of opportunistic infections in PLHIV. Several comorbidities associated with HIV infection, ART side effects and the aging population of PLHIV, require a patient-centered and multi-disciplinary management approach. Pharmacists are pivotal in screening for CVD, diabetes, bone health and other comorbidities and their management.

Addressing Social Determinants of Health

Health outcomes are determined by medical care and a patient's social, economic and environmental factors, often referred to as social determinants of health (SDOH). SDOH may impact an individual's risk of HIV infection, access to HIV screening and care and their overall well-being.[25] Addressing SDOH in HIV requires a multifaceted approach that acknowledges the complex interplay between social, economic and health factors. Pharmacists, as part of the multidisciplinary care team, can help by screening for SDOH and identifying high-risk populations and design a targeted approach to provide access to screening and HIV care, medication access and affordability, ongoing HIV therapy outcomes monitoring and comorbidity management.

About Clearway Health

Clearway Health's specialty pharmacy services create sustainable assets and build lasting legacies for hospitals and health systems, providing a service that every patient deserves. We began at Boston Medical Center Health System, improving access to care and managing the complex medication needs of vulnerable patient populations. Equipped with this unique experience to solve challenges, Clearway Health partners with other hospitals and health systems to provide transformative specialty pharmacy services that put patients first. We build and strengthen the infrastructure for specialty pharmacy programs including operational workflows, clinical programs, hiring and embedding skilled pharmacists and patient liaisons into the clinical team, providing proprietary software technology, unlocking drug access and leading accreditation processes. We deliver a clinically driven service that eliminates barriers to medication access, improves the health of patients and communities, grows revenue at healthy margins for health systems and reduces costs for patients.

To learn more, visit www.clearwayhealth.com.

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