

# Improving Medication Adherence in HIV-Positive Young Adults

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## Introduction

### Background

- Human immunodeficiency virus (HIV) is an epidemic which affects more than 36.7 million people, worldwide
- Of the 70% with known HIV infection globally, 20.9 million are on antiretroviral therapy (ART)
- DHHS recommends everyone diagnosed with HIV begin ART as soon as possible after diagnosis
- Starting, stopping, then re-initiating ART can lead to unsuppressed virus, which can lead to medication resistance
- Medication adherence is important for HIV-positive patients on (ART) as non-adherence can lead to drug resistance, transmission of HIV to other people, and complications and progression of the disease process up to and including death
- Patients face many barriers to ART adherence, including side effects, difficulty taking medication, living situation, mental health issues, substance abuse, pill burden, and forgetfulness
- Specific barriers at the HIV Clinic include transportation, pill burden, and forgetfulness
- Approximately 36.9 million people currently living with HIV
- Almost 21 million, 53%, are on antiretroviral (ART) medication
- CDC (2018) estimates 38,500 new HIV infections in the US
- Fewer new infections, primarily due to ART
- The HIV Clinic sees about 1,200 HIV-positive patients
- The literature has shown that mobile app reminders can improve medication adherence in HIV-positive patients

## Purpose & Aims

**Purpose:** The purpose of this quality improvement project is to implement a mobile app to encourage medication adherence among HIV-positive young adults as evidenced by decreased viral load and increased CD4 count

**Aim 1:** To implement the use of a cellular telephone app to support current antiretroviral medication adherence teaching practices for HIV-positive young adults.

**Aim 2:** To increase antiretroviral medication adherence in HIV-positive young adults as evidenced by decreased viral load and increased CD4 count.

## Methods

**Design:** Pre-posttest design was used for this quality improvement project. Setting: Dedicated HIV Clinic located in an urban, public, academic, health sciences center.

### Inclusion Criteria:

- HIV-positive
- On an antiretroviral medication regimen
- Age 19-29

### Exclusion Criteria:

- HIV-negative
- Not on antiretroviral medication
- Age 18 and below or 30 and above

### Intervention:

- Medication adherence survey
- Cellular telephone medication reminder app, free

### Data Collection:

- Pre- and post-intervention survey, 8-item, paper
- Pre-intervention lab (CD4 count and viral load), collected at regularly scheduled clinic visit

Table 1 Baseline Characteristics of HIV-Positive Young Adults

Demographic characteristics	(N=6)
Age, mean (SD)	26.0 (1.8)
Sex, n (%)	
Male	5 (83.3)
Female	1 (16.7)
Race, n (%)	
Black, African American	4 (66.7)
Hispanic or Latino	2 (33.3)

SD = Standard Deviation

## Results

### Demographics

Baseline (n=6): More males (83.3%), mostly African-American (66.7%), 33.3% Hispanic/Latino  
Post-Intervention (n=6): Same demographics

### Descriptive Statistics

Baseline pre-intervention survey scores (n=6)  
Median summary score: 5 (total score possible: 11)  
Post-intervention survey scores (n=6)  
Median summary score: 6 (total score possible: 11)

There was no statistically significant difference noted between pre- and post-intervention survey results.

## Discussion & Conclusions

### Discussion

#### Findings:

- Medication adherence app is helpful for some, but not all
- Forgetfulness most common cause for medication non-adherence
- Other barriers to adherence include side effects of medication, feelings of depression and hopelessness, and fear that someone would find out what they are taking and why

#### Limitations:

- Small sample size
- Difficulty recruiting
- Recruitment process lasted longer than estimated
- Post-intervention lab unable to be collected due to time constraints

#### Strengths:

- Identification of multiple barriers to adherence
- Findings may be used to inform further research

#### Recommendations:

- Continue assessment of patient-identified barriers to adherence
- Evaluate adherence at each clinic visit
- Re-evaluate and modify intervention based on findings

### Conclusions

- May improve adherence
- May improve patient outcomes by reducing the viral load and increasing the CD4 count
- May inform further research