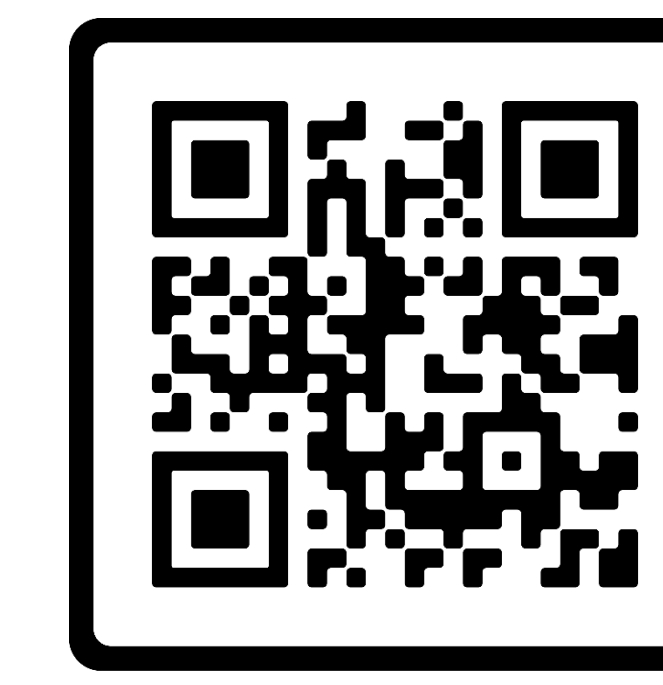


# Association of ART Type and Adherence with Viral Suppression: An Observational Study of a Clinical Population of People with HIV

Jasmine Manalel<sup>1</sup>, Jennifer Kaufman<sup>1</sup>, Yiyi Wu<sup>1</sup>, Ethan Fusaris<sup>2</sup>, Arlene Correa<sup>2</sup>, Jerome Ernst<sup>2</sup>, Mark Brennan-Ing<sup>1</sup>

<sup>1</sup>Brookdale Center for Healthy Aging, Hunter College, City University of New York; <sup>2</sup>Amida Care Inc.



SCAN ME

**HUNTER**  
Brookdale Center  
for Healthy Aging

@HunterBrookdale  
<https://brookdale.org/>

This work was supported by an Investigator Sponsored Research Grant from Gilead Sciences

## BACKGROUND

- Adherence to antiretroviral therapy (ART) is essential for effective management of HIV
- Barriers to ART adherence include mental health conditions, substance abuse, and unstable housing
- Recently developed ART drugs are more “forgiving” of poor adherence
- ART forgiveness allows people living with HIV (PLWH) to stay virally suppressed at lower adherence levels (e.g., <90%)

## STUDY AIMS

- Identify patterns of ART utilization in a real-world clinical population
- Determine whether certain ART utilization patterns were more forgiving of poor adherence

## METHOD

### Sample

- 3,552 members of a Medicaid managed care plan who were HIV positive and continuously enrolled from 2017 through 2019
- Claims and clinical records data

### Baseline Demographics

|                 |                        |     |
|-----------------|------------------------|-----|
| Gender Identity | Cis Female             | 32% |
|                 | Cis Male               | 63% |
|                 | Transgender            | 5%  |
| Race            | Black/African American | 54% |
|                 | White                  | 8%  |
|                 | Multiracial            | 35% |
| Ethnicity       | Hispanic/Latino        | 35% |
| Age categories  | 18 – 29 years          | 13% |
|                 | 30 – 59 years          | 47% |
|                 | 60 + years             | 29% |

### Analysis

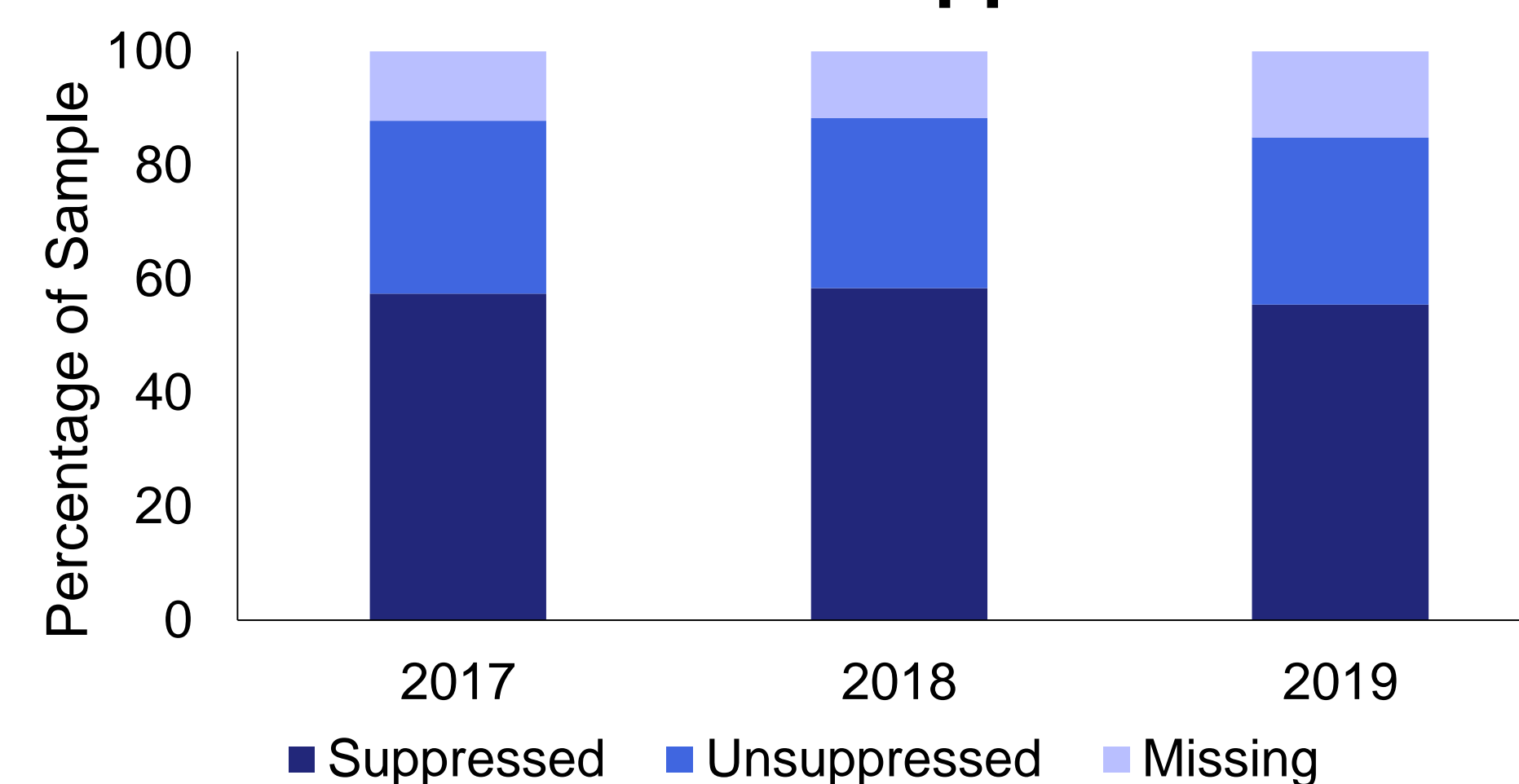
- Pharmacy fill data were used to characterize ART medications with latent class analysis (LCA) to capture the complexity of real-world ART usage (e.g., multiple medications, ART switching)
- Logistic regression models examined whether odds of viral suppression vary by ART adherence level for each latent class
- Covariates: sociodemographics, physical comorbidities, behavioral conditions, nadir CD4 cell count, ART switches

## Latent Classes of ART Medication Usage

| LCA Name | Drug Class           | 2017 | 2018 | 2019 |
|----------|----------------------|------|------|------|
| LCA 1    | DTG+FTC/TAF+DRV/COBI | 26%  | 25%  | 20%  |
|          | DTG                  |      |      |      |
|          | FTC/TAF              |      |      |      |
|          | DRV/COBI             |      |      |      |
| LCA 2    | DRV+RTV+FTC/TDF      | 16%  | 11%  | 6%   |
|          | RTV                  |      |      |      |
|          | DRV                  |      |      |      |
| LCA 3    | DTG/ABC/3TC          | 37%  | 15%  | 30%  |
|          | BIC/FTC/TAF          | 26%  | 25%  |      |
| LCA 4    | EVG/COBI/FTC/TAF     | 24%  | 19%  |      |
| LCA 5    |                      |      |      |      |

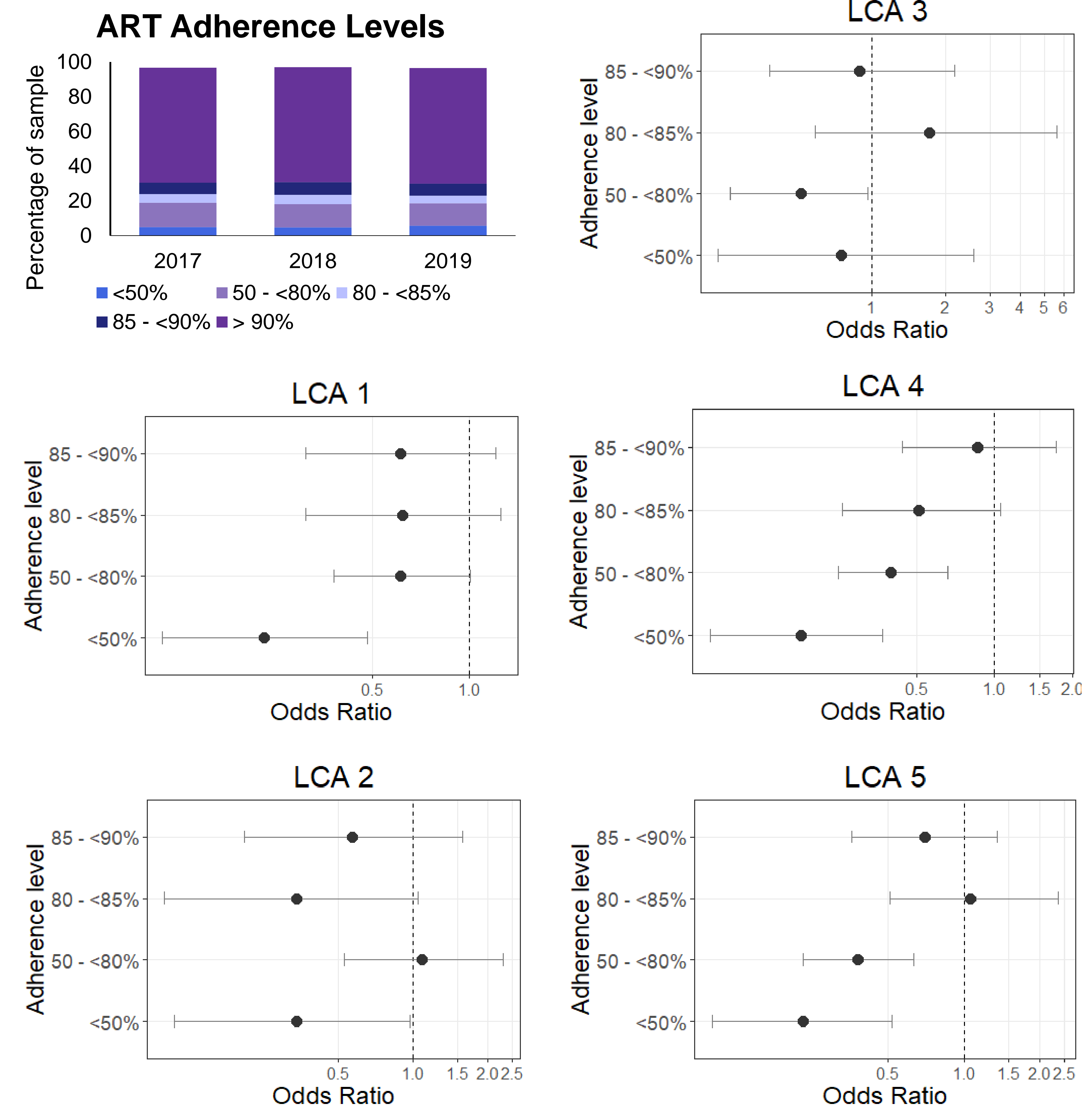
Drug names: 3TC = lamivudine; ABC = abacavir; BIC = bictegravir; COBI = cobicistat; DRV = darunavir; DTG = dolutegravir; EVG = elvitegravir; FTC = emtricitabine; TAF = tenofovir alafenamide; TDF = tenofovir disoproxil fumarate. Drug classes: INSTI = integrase strand transfer inhibitors; NRTI = nucleoside reverse transcriptase inhibitors; PI = protease inhibitor. Note: Drugs identified in each latent class to not identify a specific regimen but represent the range of medications used by participants in each class

## HIV Viral Load Suppression



## RESULTS

### Association between Adherence Levels and HIV Viral Suppression by Latent Classes



## RESULTS SUMMARY

- Five latent classes of ART medication usage were identified consistently out of 1100+ unique medication combinations
- In each year, over half the sample reported an undetectable HIV viral load
- Two-thirds of the sample were at least 90% adherent to ART in each year
- Latent classes of ART medication usage did not differ significantly in odds of maintaining viral suppression with at least 80% adherence
- Covariates, nadir CD4 count and number of behavioral conditions, were associated with viral suppression in all models

## CONCLUSIONS

- ART adherence levels required for HIV viral suppression in real-world settings may be lower than previously used benchmarks
- Failure to maintain durable viral suppression appears to be part of a syndrome of poor health in this population of PLWH engaged in more contemporary ART regimens
- Findings can be used to target at-risk populations (e.g., those with nadir CD4 count <200 or behavioral health conditions) to reduce barriers to adherence and engage them in continued education about the consequences of low adherence