

# ZAMBIAN URBAN ADHERENCE CLUBS

## Evidence-Based Structural Intervention Good Evidence – Medication Adherence

### INTERVENTION DESCRIPTION

#### Goals of Intervention

- Improve on-time antiretroviral treatment (ART) medication pick-up
- Improve ART adherence

#### Intended Population

- Persons with HIV (PWH) who are ART-experienced

#### Brief Description

*Zambian Urban Adherence Clubs* is group-level intervention and health services innovation using differentiated service delivery (DSD) designed to improve on-time drug pickup. An Adherence Club (AC) is a group of approximately 30 PWH on ART who meet during off-hours at an HIV treatment facility to receive medication refills, symptom screening, counseling, and group psychosocial support. The Zambian AC is based on South African ACs that are nurse-led. The Zambian ACs are led by pharmacy technologists who pre-package ART medication and dispense it to the members at the meeting. Groups are supported by two lay community health workers (CHW) who conduct symptom screening and lead a group counseling session. AC members meet every two months in the first 6 months after club formation and continue to visit the facility every six months for both clinical follow-up and laboratory monitoring. Patients who are unable to attend the meeting in person can send a buddy for medication pickup on their behalf. No restrictions are placed on the frequency of use of the buddy system, and lack of meeting attendance is not considered a criterion for removal from the club and does not affect referral back to facility-based care, if needed. Patients are referred from the AC to the facility in the case of acute illness or positive symptom screening and are transferred out of the AC if they became pregnant or because of patient or clinician preference.

#### Theoretical Basis

- Differentiated Service Delivery (DSD) Model

#### Intervention Duration

- 12 months

#### Deliverers

- Community health workers
- Pharmacy technologist

#### Intervention Settings

- Off-hours at HIV treatment facilities

#### Delivery Methods

- Counseling
- Medication assistance/management/support
- Social support

## Structural Components

- Access – HIV medical care
  - Refills of ART medication were dispensed to participants at meetings. Participants could send a buddy for medicine pickup
- Capacity Building – Hiring staff
  - Pharmacy technologists and CHWs were hired in addition to existing clinical staff
- Physical Structure – Services provided in non-traditional setting
  - Meetings and prescription refills provided during facility off-hours
- Policy/Procedure – Institutional policy/procedure
  - The Center for Infectious Disease Research in Zambia adapted South Africa’s nurse-led AC model and implemented an AC pharmacist-led model in clinics

## INTERVENTION PACKAGE INFORMATION

**An intervention package is not available at this time.** Please contact **Monika Roy**, University of California – San Francisco, Center for AIDS Research, 1001 Potrero Avenue, San Francisco, CA 94110.

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## EVALUATION STUDY AND RESULTS

### Study Location Information

The original evaluation study was conducted in 3 provinces (Lusaka, Southern and Eastern) in Zambia from May 2016 through October 2017.

### Key Intervention Effects

- Improved ART adherence

### Study Sample

The intervention group (analytic) sample of 571 is characterized by the following:

- 62% female persons; 48% male persons
- Median age 42.0 years
- Median initial CD4 count (cells/mm<sup>3</sup>): 441
- Median time since enrollment in HIV care: 5.2 years
- Median time since ART initiation: 4.8 years
- Medication possession ratio at study enrollment: 83%
- Late drug pickup (>7 days late) in year prior to study enrollment: 305 individuals (53%)

Note: Percentages may not add up to 100% due to rounding.

The control group (analytic) sample of 489 is characterized by the following:

- 66% female persons; 44% male persons
- Median age of 40.8 years
- Median initial CD4 count (cells/mm<sup>3</sup>): 475
- Median time since enrollment in HIV care: 5.6 years
- Median time since ART initiation: 5.0 years
- Medication possession ratio at study enrollment: 83%
- Late drug pickup (>7 days late) in year prior to study enrollment: 271 individuals (55%)

## Recruitment Settings

- Urban HIV clinic

## Eligibility Criteria

PWH were eligible if they were aged 14 years or older and on ART >6 months. People who were acutely ill or had a CD4 count <200 cells/mm<sup>3</sup> were excluded.

## Assignment Method

Five-matched pairs of clinics were selected. Clinics were assigned by matched-pair cluster randomization to 1 of 2 study arms: Zambian Urban Adherence Clubs (5 clinics; n = 571) or control (5 clinics; n = 489). A systematic random sample (where every *n*th patient based on clinic population size) was assessed for eligibility at each clinic.

## Comparison

The control group received the standard of care and were assigned return visits to the facility every 1 to 3 months. In addition to seeing the clinician, the patients in the control group had separate encounters with the pharmacist and adherence counselor on the day of their visit.

## Relevant Outcomes Measured

- Time to first late drug pickup (more than 7 days late) from existing electronic medical record.
- Medication possession ratio (MPR) or the proportion of time that a patient has ART in their possession over 12 months was assessed as 365 minus the number of days of ART non-possession, divided by 365, multiplied by 100 (to express MPR as a percentage).

## Participant Retention

- Adherence Clubs: 87.2% retained at 12 months
- Control: 91.7% retained at 12 months

Participant retention is not a criterion for the Structural Interventions chapter.

## Significant Findings on Relevant Outcomes

- In adjusted survival analyses, the rate of late drug pickup was lower in intervention participants compared to control participants (adjusted hazard ratio [aHR]: 0.26, 95% Confidence Interval [CI] 0.15-0.45,  $p < 0.001$ ).\*
- Median MPR at 12 months post-enrollment was 100% among intervention participants (mean 95%; Interquartile Interval (IQI) 96% - 100%) compared to 96% among control participants (mean 89%; IQI 80%-100%) ( $p < 0.001$ ).

\* Adjusted for age, sex, illness at care enrollment, time since ART initiation, and MPR at enrollment

## Considerations

*Additional significant positive findings on non-relevant outcomes*

- None reported

*Non-significant findings on relevant outcomes*

- Time to return after first late drug pickup was similar in both groups: median of 25 days (IQI: 5-63) in the intervention arm and 15 days (IQI: 3-84) in the control arm (log rank test:  $p = 0.25$ ).

### *Negative findings*

- None reported

### *Other related findings*

- Twelve-month cumulative incidence of first missed drug pickup was 0.24 (95% CI 0.20 – 0.27) in the intervention and 0.67 (95% CI: 0.63 – 0.72) in the control group.
- This intervention is also determined to be Good-Evidence for the Medication Adherence chapter.

### *Implementation research-related findings*

- Adoption: Of 597 patients offered AC participation, 594 (99%) accepted; 508 (85%) attended their first meeting, and 237 (40%) attended all AC meetings, with 194 (33%) missing 2 or more group meetings.
- Acceptability: Patients who participated in focus group discussions reported that ACs were highly acceptable because of more time during normal working hours to address livelihood concerns regardless of employment status; reduced concerns about stigma due to decreased exposure to other clinic patients during facility busiest hours; and reduced self-stigma and improved access to information and group support. Healthcare workers found the model highly acceptable due to perceptions of reduced clinic congestion and, in select cases, workload.
- Appropriateness: Qualitative findings suggested that patients felt ACs were appropriate because of reduced stress and logistics in accessing medication, preference for group counseling over one-on-one counseling, and strengthened patient-centered approach.
- Feasibility: Both patients and healthcare workers described AC model as being feasible with sufficient staff and funding. Almost all participants stressed that ACs would only be successfully integrated and scaled in the current health system if (1) government-employed AC group leaders are selected and trained to be respectful and patient-centered, (2) lay healthcare workers, who play a key role in AC functions have formal employment; and (3) increased human resources for health, to meet pharmacy needs are available.
- Fidelity: Overall, of 3,734 scheduled AC meeting visits, 683 (18%) were not attended. However, drug pickup within 7 days still occurred for 350 (51%) of these missed visits, either via buddy pickup or early return for drug pickup at the facility. Intervention discontinuation occurred among 32 participants, with pregnancy being the most common reason for discontinuation ( $n = 10$ ).

### *Process/study execution findings*

- None reported

### *Adverse events*

- None reported

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## REFERENCES AND CONTACT INFORMATION

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