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INTRODUCTION

In Vietnam, HIV prevalence among people who inject drugs (PWID) is several times higher than in the general population (15% versus 0.3%).

Often driven by poor adherence to antiretroviral therapy (ART), PWID experience higher rates of HIV-related mortality as compared to the general population

Phase three randomized clinical trials have demonstrated efficacy of long-acting injectable antiretroviral therapy (LAI) as non-inferior to daily oral ART. Instead of taking a pill every day, patients receive intramuscular injections every 4- or 8-weeks

Although highly acceptable among trial participants, PWID and others with substance use disorder were generally excluded from early trials

Our objective was to identify and characterize barriers and facilitators to LAI among PWID, ART providers, and HIV policymakers in Vietnam

METHODS

We used the Consolidated Framework for Implementation Research (CFIR) to guide study design and analysis

CFIR is a theoretically-informed taxonomy of constructs likely to influence successful implementation of complex interventions, that includes 39 constructs across five domains

We conducted semi-structured in-depth interviews in Hanoi, Vietnam between February and November 2021

Participants were purposively sampled to provide a wide range of opinions and experiences, including:

- 1) Policymakers across government agencies in Vietnam;
- 2) ART providers (physicians, counselors, and pharmacists);
- 3) PWID, including persons with HIV engaged in ART care, recently diagnosed with HIV but not yet on ART, and previously on ART but defaulted

Separate codebooks were developed for patient and participants, reflecting a mix of deductive codes (e.g. adherence facilitators) and inductive codes (e.g. deference to medical authority) based on emerging themes

Analysis proceeded in two-phases:

- 1) applied open, thematic coding to develop and iteratively refine codebooks;
- 2) discussion of the key themes and subthemes characterizing barriers and facilitators to LAI implementation, mapping themes to subdomains of the CFIR framework

RESULTS BY CFIR DOMAINS

Characteristics of the intervention

Relative advantage
Complexity
Evidence strength & quality
Cost

“Because I still use drugs and I often forget to take the oral pills.

This medicine is very great, I only need to tell my family to remind me to get injections once a month. I think I can do that, taking medicine every day is quite difficult for me now.” – *44-year-old male PWID, not on ART, lost to follow-up*

“There are many situations that make me think about drugs, when I'm too sad or too happy I also think about it. The needles will also remind me of it.” – *36-year-old male PWID, on ART*

“[Oral ART] only has one weakness, that is, patients often get questions from other people such as “Why do you have to take medicine every day.” If the oral pills can also solve the problem of such questions, I think they will choose the oral option rather than the injection.” – *policymaker (MOH)*

Outer setting

Patient needs & resources
External policy

“Our clinic has changed the treatment methods many times... There are many projects with a lot of technologies, but as long as we're well trained, we will work well, our staff here are used to it, we do this job, so we always need to update new knowledge with new technology...” - *provider (physician)*

“I think that, for patients who are on treatment now, especially patients who use opiates or who use drugs, we find that the oral treatment model now is very effective...the percentage of patients who achieve the viral load results under the threshold is 98%.”- *Policymaker (MOH)*

Inner setting

Structural characteristics
Readiness for change
Implementation climate
(tension for change)

“In general, I really believe in the treatments offered here, whatever they counsel me, it's because they just want the best for me, that's what I see.” – *41-year-old male PWID, on ART*

“[O]ur clinic has changed the treatment methods [for HIV] many times. Up to now, it's changed 103 times, then mother-child transmission treatment. There are many projects with a lot of technologies, but as long as we're well trained [on administering LAI], we will work well...” – *Provider (physician)*

Characteristics of individual

Individual identification with organization
Knowledge, beliefs, and self-efficacy

“We never categorize the HIV-infected people into any group, whether they are drug users or whatever, they're all HIV patients, and for any HIV-infected patient, no matter what group they belong to, they have equal access to the same treatment. This means that all are provided with counseling, testing, and the benefits of treatment are the same, regardless of the target group.” – *policymaker (MOH)*

Key: Barrier, Facilitator, Mixed

RESULTS (CON'T)

Table 1 PWID participant characteristics, n=19

Sociodemographic	Median [IQR], (range), n(%)
Age (years)	41 [39,45] (34-47)
Male	17 (89.6%)
Employment	
Stable	2 (10.5%)
Part-time	1 (5.3%)
Self-employed	11 (57.9%)
Not working	5 (26.3%)
Injection drug use	
Years since first injected	20 [9,24] (2-28)
Injecting daily in last 3-months	7 (36.8%)
On methadone assisted therapy	11 (57.9%)
HIV	
Years since diagnosis	11 [2,18] (0-23)
Currently on ART ¹	14 (87.5%)
≥1 missed doses in prior month	4 (37.5%)

ART: antiretroviral therapy; IQR: interquartile range
¹14 on ART, 4 ART naïve, 1 previously defaulted from ART

Interviewed **38 stakeholders** including 19 PWID (Table 1), 14 ART clinic staff, and 5 HIV/AIDS policymakers

Clinic staff included prescribing physicians (n=4), counselors (n=3), pharmacists (n=3), & clinic directors (n=4).

DISCUSSION

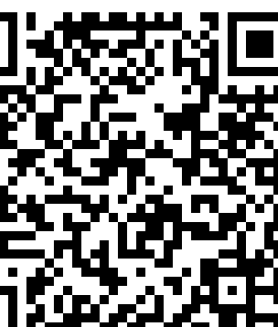
Concrete barriers to LAI implementation included structural characteristics pertaining to investment in personnel and complexity of implementation, shifting workloads, and requiring additional resources such as refrigerated storage space/transport and injection rooms

All PWID, providers, and policymakers readily acknowledged the *relative advantage* of a less frequent dosing paradigm as an effective strategy to reduce missed doses.

PWID and providers identified unique barriers to adherence for PWID, particularly around stigma and ongoing drug use

Providers and PWID were confident in their ability to administer and receive LAI, but uncertainty regarding side effects was a concern

Provider and policymaker discordance in both perceived need and appropriateness of a PWID-directed LAI implementation strategy exposes a critical and previously unexplored tension relevant to LAI scale-up for this vulnerable population



Key references:

- (1) Orkin C, Arasteh K, Górgolas Hernández-Mora M, Pokrovsky V, Overton ET, Girard P-M, et al. Long-Acting Cabotegravir and Rilpivirine after Oral Induction for HIV-1 Infection. *N Engl J Med.* 2020 Mar 19;382(12):1124–35.
- (2) Damschroder LJ, Aron DC, Keith RE, Kirsh SR, Alexander JA, Lowery JC. Fostering implementation of health services research findings into practice: a consolidated framework for advancing implementation science. *Implement Sci.* 2009 Aug 7;4:50.
- (3) Mantsios A, Murray M, Karver TS, Davis W, Galai N, Kumar P, et al. Multi-level considerations for optimal implementation of long-acting injectable antiretroviral therapy to treat people living with HIV: perspectives of health care providers participating in phase 3 trials. *BMC Health Serv Res.* 2021 Mar 20;21(1):255.