

## ORIGINAL ARTICLES

# Unveiling Key Determinants for Scaling-up Systems Navigation and Psychosocial Counselling (SNaP) for People Who Inject Drugs with HIV in Vietnam Using the Consolidated Framework for Implementation Research

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## ABSTRACT

**Objective:** Systems Navigation and Psychosocial counseling (SNaP) is an evidence-based intervention that was clinically proven to improve HIV-related health outcomes among people who inject drugs living with HIV in a study in Indonesia, Ukraine, and one province in Vietnam. However, whether or not the SNaP intervention is effective when it is scaled up to different regions in Vietnam. This study was conducted in 2 provinces (Hanoi and Thai Nguyen) to explore key determinants for scaling up the SNaP intervention in Vietnam.

**Methods:** Data were collected via 4 focus group discussions (FGDs) with leaders of provincial and site health departments. FGDs were transcribed, translated into English, and coded using Dedoose software to categorize determinants based on five domains of the Consolidated Framework for Implementation Research (CFIR).

**Results:** The SNaP intervention's alignment with the country's current health regulations (outer setting) was most highlighted as the key facilitator for scaling up, followed by the willingness of healthcare leaders and providers to incorporate SNaP into their clinical practices, which was due to the intervention's strong evidence base and quality (intervention characteristics). The most prevalent barrier was clinics' limited resources, specifically, time, personnel, and financial support (inner setting).

**Conclusions:** The reported determinants provided practical implications to inform the development of relevant implementation strategies to scale up the SNaP intervention across Vietnam.

**Keywords:** HIV, Implementation research, People who inject drugs, Systems Navigation and Psychosocial counseling.

## INTRODUCTION

People who inject drugs (PWID) living with HIV face barriers to accessing antiretroviral treatment (ART) and medications for

opioid use disorder (MOUD), particularly in low- and middle-income countries, due to communication barriers with healthcare providers, paperwork, limited resources to access HIV treatment clinics, social



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Submitted: 28 April, 2025

Revised version received: 15 July, 2025

Published: 28 August, 2025

DOI: <https://doi.org/10.38148/JHDS.0904SKPT25-060>

stigma and lack of social support (1,2). One intervention that is effective for addressing these barriers for PWID with HIV is Systems Navigation and Psychosocial counseling (SNaP). The SNaP intervention includes 2 main components: i) system navigation that mostly addresses systems/structural barriers; and ii) psychosocial counseling that addresses individual barriers and social barriers. SNaP was evaluated in the HIV Prevention Network Trial 074 (HPTN 074 study) in Indonesia, Ukraine, and Vietnam (3). In HPTN 074, SNaP was proven to increase ART uptake and use, improve viral suppression, and reduce mortality in PWID with HIV (3,4).

The effectiveness of SNaP was striking, but its effects were observed in a controlled trial environment. Thus, a study called “*Scaling up HPTN 074: a Cluster Randomized Implementation Trial of an Evidence-based Intervention for Antiretroviral Therapy for PWID in Vietnam*” (the SNaP study) (NCT03952520) was conducted with the aim to scale up SNaP intervention throughout 42 HIV testing sites in 10 provinces located in 5 regions of Vietnam (5). However, whether or not the SNaP intervention is effective when being implemented on a large scale because successful scale-up of interventions hinges on systematically identifying determinants that either facilitate or hinder intervention implementation. Conceptual frameworks can assist researchers and practitioners in determining the types of implementation strategies (i.e., methods or techniques used to enhance uptake of the intervention) that are most effective at each stage of implementation (6,7). Focusing on identifying determinants during the pre-implementation process can help ensure that the appropriate strategies are developed and deployed in the later stages (8). Prior to SNaP scale-up, determinants of scaling up SNaP throughout 42 HIV testing clinics in 10 provinces in Vietnam were identified. This paper reports on those determinants to inform

the development of relevant implementation strategies for the intervention’s scale-up.

## METHODS

**Study Design:** This qualitative study was nested within the parent SNaP study.

**Study site and time:** Focus group discussions (FGDs) were conducted around 6 months before the commencement of the parent SNaP study, from June to August 2019, in two of the ten study provinces: Thai Nguyen, where the SNaP intervention in the HPTN 074 study was evaluated, and Hanoi, where many HIV prevention programs had been conducted.

**Study subjects:** We conduct the FGDs with leaders from provincial departments of health (DoH), Centers for Disease Control (CDCs), and the district level, and heads of departments at provincial CDCs. The FGD participants have had extensive experience in developing HIV prevention programs and providing HIV-related services to the target population.

**Sample size and sampling methods:** Two rounds of the FGDs were conducted. Each round included two FGDs with 10 participants in total (5 per FGD), of whom six were leaders of provincial DoH/CDCs/study sites, and four persons were heads of departments at provincial CDCs.

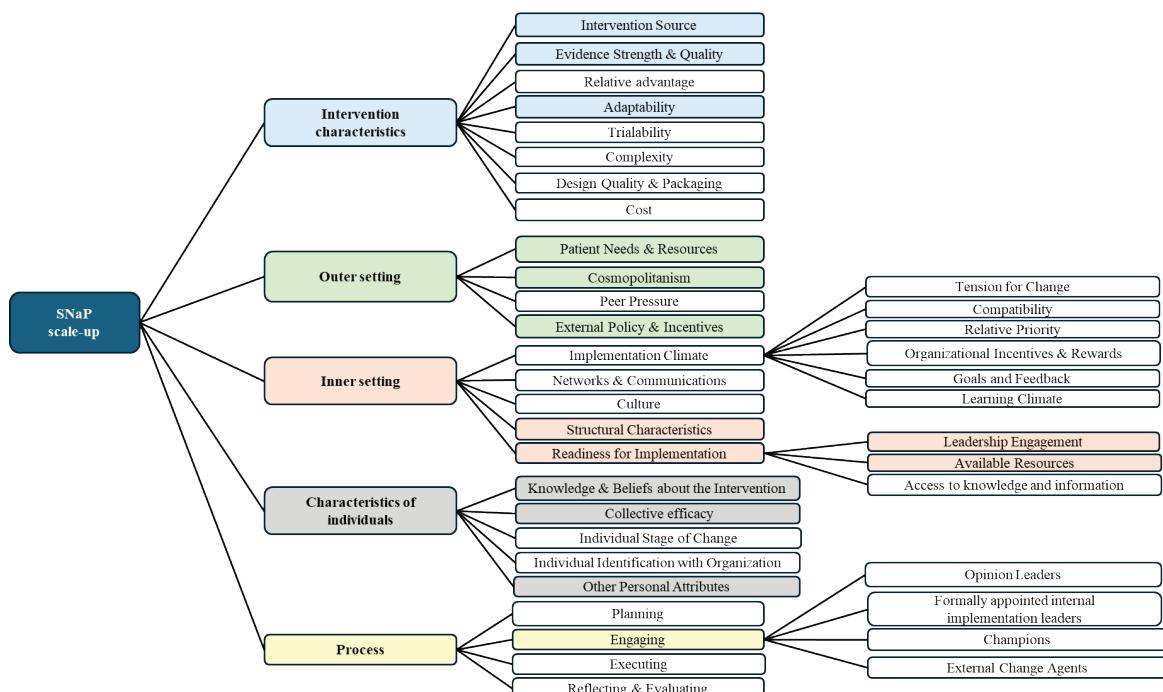
**Conceptual Framework:** The Consolidated Framework for Implementation Research CFIR was used as the conceptual framework to identify potential factors that could influence the scale-up of SNaP (9). The CFIR was chosen as the principal framework for this process since this model is comprehensive and considers possible factors influencing intervention scale-up. It also considers different layers, from the intervention itself to the implementers’ characteristics and contextual factors. The CFIR helps explore implementation facilitators and barriers at the

patient, site staff, organizational, and public policy levels (10). The CFIR is among the most highly cited frameworks in implementation science and has been listed in the top five most accessed articles (11). Additionally, the CFIR can be applied in any phase of the implementation of an intervention and within different settings (10,12).

**Tools and methods of data collection:** Data were collected via 4 FGDs in two rounds, with the FGD guide was developed based on 5 domains of the CFIR, including: (i) Intervention characteristics; (ii) Outer setting; (iii) Inner setting; (iv) Characteristics of individuals; and (v) Process. The first round focused on identifying barriers and facilitators to SNaP scale-up, and the second round discussed potential implementation strategies after prioritizing identified determinants. Each FGD lasted approximately 120 minutes. All

discussions were conducted in Vietnamese, audio-recorded, and then transcribed verbatim for analysis.

**Processing and analyzing data:** The Vietnamese transcripts were translated into English by three professional translators. The CFIR domains were used as a coding template. The translated transcripts were then uploaded to Dedoose and coded. Double coding was conducted by four study team members (i.e., each transcript was coded by two team members, one Vietnamese and one English native). Any difference in coding was discussed among the coders to reach consensus on the coding results. The coded data were then reviewed and categorized under the CFIR constructs and domains by one study team member, which was later reviewed by another study team member before finalization (Figure 1).



**Figure 1. Coding tree based on the CFIR domains (The colored boxes represented themes that emerged from the FGDs)**

**Research ethics:** The study was approved by the Institutional Review Boards at the University of North Carolina at Chapel Hill (dated 25 March 2019), Hanoi Medical University (No. 09/HMUIRB dated 25 March 2019), and the Vietnam Ministry of Health (No. 134/CN-HDDD dated 31 December 2019). All participants provided their written informed consent after being fully informed and understand the study's objectives and its ethical aspects.

## RESULTS

Overall, FGD respondents reported various determinants of SNaP scale-up across five domains of CFIR.

### Domain I - Intervention characteristics

Intervention source, evidence strength and quality, and adaptability of the intervention were the three most discussed constructs in the intervention characteristics domain.

**Intervention source** was identified as a significant facilitator. Most FGD respondents were willing to participate in SNaP study since they perceived the SNaP intervention as being implemented by the Vietnam Administration of HIV/AIDS Control (VAAC) (from March 2025, it has been integrated into the Vietnam Administration for Disease Prevention), and the study was approved by the Ministry of Health, the highest health system administration body in the country. Particularly, the SNaP intervention was evaluated as a complement to the routine activities at the testing clinics.

*"I found this intervention necessary and close to the reality that we are now doing". (INT1)*

Another potential facilitating factor that was mentioned in the FGDs was the **evidence strength and quality** of the intervention. FGD participants shared their positive perceptions of the strength and quality of the

SNaP intervention because of the significant results from the HPTN 074 study. The SNaP intervention was highly appraised because it was strictly tested and proved to be effective among PWID with HIV.

*"For the intervention in HPTN 074... I find it to be a specialized model... I think SNaP intervention will fill those gaps fundamentally in the areas where the research is conducted". (INT3)*

The perceived facilitator of strength and quality enhanced providers' engagement and their belief in the quality of the intervention. Although the main content of the required intervention sessions was similar to the Ministry of Health's HIV post-test counseling, the intervention is considered as a "*comprehensive package for PWID*", which "*offers 'tangible' interventions, such as system navigation, psychosocial counseling, and additional counseling related to other areas that our current routine has not yet implemented, like using other substance, mental health problems, and family support issues*". (INT4)

**Adaptability of the intervention** was mostly discussed as an important facilitator, though some concerns related to the number of intervention sessions were mentioned and addressed during the intervention manual adaptation period. Flexibility to deliver the intervention and short counseling/navigation sessions were reported as facilitators to motivate site staff's participation in SNaP. Thus, it was important to emphasize the flexibility of the counseling sessions and clearly instruct staff providing voluntary counseling and testing (VCT) services about the way to counsel clients within their scope of work.

*"I think that when the counselors are in the counseling process, they will grasp the problems that the clients need support... It is flexible in counseling and navigation". (INT6)*

In addition to the counseling duration, with the most recent regulations of the government to facilitate people with HIV in treatment as

early as possible, preferably within 24 hours after they receive their confirmation tests, the SNaP intervention was adapted accordingly. As a result, the combination of the 2 required counseling sessions in the trial phase of HPTN 074 into 1 session in SNaP's scale-up phase was made. Provincial CDC leaders expressed their positive perceptions of the combination of the 2 required counseling sessions into one.

## Domain II - Outer setting

**Patient needs and resources**, including drug use and addiction, support from health workers, and HIV-related stigma, were the most frequently reported determinants in the outer setting domain. More than half of FGD respondents perceived that PWID with HIV were susceptible to stigma and discrimination from their family and society. This challenge created stress and anxiety for them, which could lead to a delay in accessing ART and MOUD. HIV stigma reduction was then perceived as one of the potential facilitating factors to the success of the intervention.

*"HIV treatment should be normalized like other infectious diseases. If stigma is solved, all problems will become easy. There are stigma and [fear of breach of] confidentiality, making HIV control more difficult". (OUT1)*

All FGD participants shared that clinics with strong networks with other organizations in their area would be more successful than those with limited connections with other relevant agencies and organizations (**cosmopolitanism**). For instance, collaborations with police, rehab centers, and other local authorities to keep patients from being incarcerated, and collaborations with community-based organizations were perceived as facilitating engagement and supporting patients. The lack of these types of collaborations was perceived as a barrier to clients' participation in the SNaP intervention. Additionally, concerns about different approaches to PWID by local government and healthcare providers were

mentioned in the FGDs. The criminalization of drug injection by the local government, by trying to put PWID in detoxification centers, was found to be a barrier for clients to seeking MOUD. Criminalization was also perceived as discouraging intervention access.

*"We just counseled and navigated a client to MOUD treatment, but suddenly, he is forced to go to a detoxification center. Sometimes, they do not legalize their decision, for example, supposedly today is the date of the decision, but they [backdate] the decision, thus our decision [of navigating clients to the MOUD facility] becomes invalid". (OUT4)*

Notably, the national target of the Joint United Nations Programme on HIV/AIDS's 90-90-90 goals (i.e., that 90% of all individuals with HIV know their diagnosis, 90% of those diagnosed are on treatment, and 90% of those on treatment achieve viral suppression by 2025) (**external policies**) was a key motivator for SNaP scale-up.

*"We are really interested in this intervention to be implemented, because you know, today, we are very busy working towards 90-90-90 goals, so there's a lot of work and activities. The SNaP intervention will complement, contribute, and it is not outside of meeting this 90-90-90 goal". (OUT5)*

One provincial health leader noted that formal commitments from VAAC, the provincial DoH/CDC, and leaders at the study sites was the first and foremost step of intervention implementation.

*"From what I see when implementing [this intervention], the most important thing is having the policy [acceptance] of the leaders". (OUT6)*

Before SNaP was implemented, official support letters from all study sites were required. These letters helped to demonstrate leadership commitment to SNaP. Approvals from local

authorities (i.e., People's committees and/or the departments of health) were also acquired for intervention implementation.

### Domain III - Inner setting

**Structural characteristics** were identified as critical determinants of SNaP implementation. Participants in FGDs mentioned the accessibility of health services, including the convenient location of services for HIV testing and treatment within one area, as a significant facilitator for patients. In recent years, several DHCs were merged with district hospitals (following circular 37/2016/TT-BYT dated October 25, 2016), while the system remained the same in other locations. After restructuring, HIV testing and treatment services could be located in different settings in some districts (e.g., counseling services were provided at the DHCs, while testing and treatment services could be accessed at the district hospital). Thus, this factor could be either a facilitator or a barrier, depending on the characteristics of each site.

*"This is called administrative reform. Providing many services in one place will create facilitating conditions for clients... the HIV testing site is too far away or not really close, it will be a difficulty as they don't know where to do HIV testing". (INN1)*

Concern about **leadership engagement** was discussed as particularly important in securing commitment to adopt the program. Having dedicated human resources was important to effectively deliver the intervention to the target group. Periodic monitoring and support from the leaders were perceived as being needed to provide feedback to implementers on their SNaP intervention progress. Overall, leadership engagement was perceived as being a facilitator in HIV testing sites with high leadership commitment but as a barrier in sites where the intervention received low leadership priority.

*"If the leaders acknowledge that activity is important, helpful, and has benefits to their*

*site, then they will encourage their staff to do the tasks... They will consider it as an activity for quality and service improvement". (INN3)*

**Available resources** were a frequently mentioned construct during the FGDs. The cost of the intervention was viewed as a facilitator for clients since SNaP is free of charge. In addition, financial support from different sources was an important solution to address client-level barriers in communities with limited resources. Nevertheless, this construct can be a potential barrier to the engagement of clinic staff in the long run.

*"Funding from international donors is certainly unstable, and funding through social health insurance might be inevitable for the intervention's sustainability". (INN5)*

### Domain IV - Characteristics of individuals

Site directors' and staff's **knowledge and beliefs about the intervention** were very important for building their motivation to implement SNaP. FGD respondents reported a high level of need regarding counselors' knowledge and skills for conducting SNaP. They expected the clinic counselors to know about the system navigation and counseling skills, in addition to the characteristics of PWIDs, particularly when they got high or had mental health issues.

*"For example, for a case that the client gets high, the counselor should not try to explain to the patient... this [type of client] is not simple and it requires experience". (CHA1)*

FGD participants in both provinces acknowledged that the SNaP intervention in the scale-up period would be conducted by the existing clinic health workforce, which varied in their capacity after changes in the district health system, such as merging DHCs and district hospitals, resulting in different locations of counseling, testing, and treatment services. This was apparent in the way they described the clinic staff's **self-efficacy** as a **collective efficacy**.

*“For [name of the site], human workforce is much stronger than in other districts, so we could do [SNaP intervention] well”. (CHA3)*

**Personal attributes**, a broad construct that included how clinic staff perceived their abilities and motivation to conduct the intervention, were not directly discussed during the FGDs since the FGD respondents were site and provincial leaders. Instead, providers' experience and skills were more emphasized than their educational background and occupational positions (e.g., nurses or doctors). It is believed that providers' strong foundation in working with PWID, combined with adequate training and motivation to perform their jobs for patients' benefit, typically facilitates rapport and trust with PWID clients, leading to a successful intervention. In contrast, lack of qualified staff, lack of motivation and commitment to the intervention, inadequate training, workload burden, and providers' perceived difficulties in working and interacting with PWID, may hinder SNaP's implementation.

*“Most of our staff are stable... For example, they will have to work on Sundays, they may make a lot of calls...it helps to increase treatment efficiency, retention, for the clients. These dedications are even more important for the intervention than background and skills”. (CHA4)*

#### Domain V - Process

One potential barrier to implementation was concerns about **engaging** and involving implementers at clinics in the integration of SNaP in their routine work. Clinic leaders and policymakers emphasized the importance of engaging clinic staff who understand the needs of the target group, particularly related to MOUD services, which require PWID to show up at the clinic every day. Since it is a challenging factor to address, the provincial leaders suggested that this should be an element to pay attention to during the training on the intervention.

*In fact, for persons who everyone knows that they are addicted to drug and have HIV, the closer the traveling distance is, the more convenient they feel... But some want to hide [their HIV status], they do not want to be in their local places... So, they go to other districts to receive treatment. But long traveling distance is too difficult in the mountainous area, so we have to train the counselor to consider specific cases [of PWID with HIV] to understand their needs. (PRO1)*

## DISCUSSION

The SNaP intervention's scope, which aligns with current regulation of the highest health governing body on HIV/AIDS prevention and control (i.e., VAAC), was described during our FGDs as the most important facilitator to SNaP scale-up. The aim of the SNaP intervention, to facilitate PWID with HIV initiating and maintaining ART, is also the priority of the Vietnam Ministry of Health. The National Strategy to end the AIDS Epidemic by 2030, setting a target that Vietnam needs to achieve the 90-90-90 goal by 2025 (13), may facilitate stakeholders from central to local levels, integrating the SNaP intervention into routine clinic activities to help achieve the national target. Additionally, this policy may help address policy-related barriers to scaling up SNaP (14). Stakeholders' interest in and willingness to integrate the SNaP intervention into their clinical activities are also beneficial factors for the implementation of the intervention. In addition to the health staff's experience working with PWID and people with HIV, and their motivation to carry out the intervention, support from clinic leaders and collaboration with colleagues from other relevant agencies and organizations will likely be decisive factors in the success of SNaP scale-up. This can be explained by the hierarchy in public management and appraisal of collective cooperation in the Vietnam context, which is different from the individual efficiency that is more focused on in countries like the US (8).

The most common barrier that affects the implementation of public health interventions in low- and middle-income countries is a limitation of resources, including time, human, and financial resources (15,16). This barrier was also reiterated in our study. Although healthcare leaders and providers see the benefits of SNaP, when being introduced into clinics throughout Vietnam, they have concerns about how health staff would be able to manage both their assigned tasks and the intervention tasks, given unchanged work schedules and compensation. This situation is analogous to the deployment of other public healthcare services in Vietnam (8,17–19). Thus, adequate training and support (i.e., suitable work assignment, venue for intervention, technical assistance from experts, incentives, and collaboration from colleagues) for intervention providers could be an effective strategy for the scale-up of an intervention like SNaP (8,17). Notably, our FGD participants mentioned that social attitudes towards PWID as criminals could prevent PWID with HIV from voluntarily accessing SNaP because stigma towards this group is still prevalent in Vietnam (20,21). While people with opioid use disorders receive MOUD voluntarily at health clinics or mandatorily in rehabilitation, detoxification, and detention centers, and HIV prevention at health or rehabilitation centers as well (22), it is vital that a close cooperation mechanism between functional sectors (health, public security, social affairs) be strengthened to facilitate the continuous both MOUD and HIV treatment and pertinent treatment referral for this population.

The CFIR framework was applied in our study in the pre-implementation phase to investigate potential barriers and facilitators to help inform the development of the study's implementation strategies for scale-up of SNaP. Based on findings from our study, a set of 15 implementation strategies was developed, applied, and tracked in all study sites. For example, a key barrier, limited knowledge of the SNaP intervention, was intended to be addressed by organizing a

meeting with VAAC leaders to present SNaP and conducting initial site visits to introduce SNaP. Specifically, in order to get staff engaged and involved in integrating the intervention into their daily routines, the workflow of clinic staff was assessed and re-designed. In addition, the staff developed weekly and monthly action plans and shared them with their department heads. Furthermore, a list of additional strategies was developed and added to the 21 sites in the tailored approach arm based on the sites' actual needs and contexts (i.e., allocating separate counseling room and providing counseling materials as 'Changing physical structure and equipment' strategy was expected to overcome the challenge of lacking a private counseling room for conducting SNaP intervention). These additional strategies were tracked, reviewed, and adjusted when necessary to meet the site's practical needs and capacities throughout the implementation process (23). Furthermore, our study employed the CFIR framework with the participation of different stakeholders, which is considered critical in the process of identifying determinants to provide a health intervention on a broader scale. A similar approach was used in Vietnam to identify potential determinants of carrying out tobacco use treatment guidelines (24). Our study also confirms CFIR's flexibility (12,25,26) through its systematic application in identifying determinants for scaling up the SNaP intervention.

Given that the data on perspectives of PWIDs with HIV on barriers to and facilitators of MOUD and ART uptake in one province in Vietnam was available from the HPTN 074 study, in this study, the recipients of the intervention (PWIDs with HIV) were not included in this identification process. Thus, determinants that might affect the scale-up of the intervention from the perspective of the intervention's target group were not captured. Future research should consider including both stakeholders and intervention beneficiaries when investigating likely determinants of an intervention's successful

scale-up to improve planning and the relevance of implementation strategies.

## CONCLUSION

This study used the CFIR to investigate key determinants for scaling up the SNaP intervention for PWID with HIV in Vietnam. The most important facilitators were described as the alignment of the intervention with current national regulations and healthcare providers' interest in and willingness to integrate the intervention into their clinical practice. Resource limitations, including time, human, and financial resources, were reported as the most common barriers that could affect SNaP's implementation.

**Acknowledgments:** Research reported in this publication was supported by the National Institute on Drug Abuse of the National Institutes of Health under Award Number R01DA047876. The research team would like to thank the SNaP central implementation team at the UNC Project Vietnam office and HMU for their preparation of the field work for this research. Most importantly, we would like to thank the study participants for sharing their valuable information and hospitality with us.

**Author contribution:** VG and WM obtained funding and designed the study. BJP contributed to conceptualizing the intervention conditions. VG, WM, BJP, LD, and MN oversaw data collection. LD and MN coded and analyzed all data. LD, HN, VC drafted the manuscript, and VG, LMG, SMB, MN, HT, BJP, JSC, SLR, and TS commented on, reviewed, and revised the manuscript. All authors contributed to, read, and approved the final manuscript.

**Conflict of interest statement:** The author declared no potential conflicts of interest with respect to the research, authorship, and/or publication of this article.

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