ORIGINAL ARTICLES

Challenges to the pilot implementation of buprenorphine treatment for people with opioid use disorder in Vietnam 2019-2020

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ABSTRACT

Objective: Between 2019 and 2020, buprenorphine treatment was piloted in Vietnam as a potential treatment option for opioid use disorder. This study aimed to describe the challenges encountered during the pilot implementation of buprenorphine treatment in Vietnam, which contributed to the decision not to expand the program nationwide.

Methods: This qualitative study was conducted in Lai Chau, Dien Bien, and Son La provinces in January 2020. The study used in-depth interviews with a total of 40 participants, including 18 methadone/buprenorphine program managers and providers, and 22 patients with experience receiving buprenorphine treatment.

Results: Both patients and providers generally perceived buprenorphine to have positive clinical effects. However, four challenges were identified at the program level: 1) limited accessibility to buprenorphine treatment, 2) heavy workload for providers without adequate compensation, 3) high pressure on providers to prevent buprenorphine diversion and 4) conflicts between the health system and police enforcement.

Conclusions: Although buprenorphine treatment is well-established as an effective and cost-effective intervention for opioid use disorder, the existing programmatic organisation of opioid use disorder treatment in Vietnam posed significant challenges. These challenges hindered both patients and providers from fully benefiting from the treatment.

Keywords: *Buprenorphine treatment, opioid use disorder, implementation challenges, qualitative study, methadone treatment, Vietnam.*

INTRODUCTION

World Health Organization estimates that about 350,000 deaths worldwide were attributable to opioids every year (1). Maintenance treatment for opioid use disorder (OUD) with methadone or buprenorphine is effective in reducing opioid use, drug-related HIV risk behaviours and criminality (2, 3). The number of people with OUD receiving maintenance treatment, however, remains modest to address the global opioid epidemic (3). Globally, only 79/196 countries with OUD provided this maintenance treatment and 27 countries were implementing high-coverage (above 40%) medication-assisted treatment (4).

Methadone is the most widely available medication for OUD treatment (3). However, despite its clinical efficacy, methadone is not attractive to many people with OUD because of the required supervised dosing procedure. Following this procedure, patients must come to the clinic every day to receive their doses. Such inconvenience limits the accessibility

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of the treatment (5). Methadone also has a great abuse potential and is expensive for its infrastructure (3).

Buprenorphine offers a more desirable treatment option. Buprenorphine has fewer interactions with antiretroviral or tuberculosis medications than methadone, making it a more appropriate treatment for people with OUD living with comorbidities (6). Given its long half-life, buprenorphine can be taken every 24 to 72 hours, reducing the need for daily clinic visits (3). The effect of buprenorphine and methadone on opioid abstinence is comparable with one study reporting 33.2% participants randomized to either methadone or buprenorphine achieved 5-year abstinence on heroin (3). While given its higher treatment retention rates (63% versus 53% on buprenorphine) (7), methadone should be prescribed to patients with higher risk of dropout, buprenorphine is recommended for socially stable patients (8). For these reasons, buprenorphine can remediate some of the barriers to the uptake of OUD treatment and thus, expand treatment coverage.

Methadone treatment was first piloted in Vietnam in 2008 as an HIV harm reduction strategy (9). Since then, the program has expanded to the whole country with 343 clinics serving 48,847 patients thanks to its outstanding achievements in reducing illicit drug use, eliminating HIV transmission among people with OUD and ensuring social security (10). Despite being the only evidence-based treatment for people with OUD in the country, methadone programs struggle to increase the number of patients and improve treatment adherence among their patients (5). Dropout rates shot up at 33.3% by 36 months and 65.6% of patients reported suboptimal treatment adherence (5). The primary reason for premature discharge was time conflict with work (11).

Pilot implementation of buprenorphine treatment in methadone clinics in three mountainous provinces in Vietnam

To increase the number of patients receiving OUD treatment, Vietnam Administration for HIV/AIDS Control (VAAC) had piloted buprenorphine treatment for two years (2019–2020) in three mountainous provinces in Vietnam (Lai Chau, Dien Bien, Son La). These provinces housed a large population of people with OUD and were notorious for geographical barriers to access to care. In the pilot implementation, buprenorphine was provided in methadone clinics by methadone providers to optimise both infrastructure and human resources. Methadone providers received additional training to perform the task. The methadone system in these provinces consists of main clinics in districts and dispensing sites in commune health centres (12). In general, stable participants receive their daily medication doses at the dispensing sites and periodically go to the main clinics for medical check-ups or counselling (12). In communes that are far from the main clinics, the dispensing site staff can perform periodical medical check-ups and counselling for patients (13). At both main clinics and dispensing sites, patients take their medication (buprenorphine or methadone) under direct supervision of the dispensing staff. After the pilot, VAAC decided not to implement buprenorphine treatment. This article described the challenges of the pilot implementation that led to this decision.

METHOD

Research design: This qualitative study is part of the evaluation of the pilot buprenorphine treatment in Vietnam.

Research subjects: We conducted in-depth interviews with buprenorphine providers and participants. Providers must have at least 6 months of experiences in OUD treatment and participants included those who switched from methadone to buprenorphine, from buprenorphine to methadone and first-time receivers of OUD treatment. We selected respondents to ensure the diversity of

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demographic characteristics, including study sites, age, and education levels.

Study site and time: Qualitative interviews were conducted at the end of the pilot implementation (in January 2020) in Lai Chau, Dien Bien, Son La where it was implemented.

Sample size and sampling: The study sample size is 40 including 18 buprenorphine providers and 22 participants who had received buprenorphine for at least 2 weeks. Among the 18 buprenorphine providers, 3 were also HIV and OUD program managers at their provincial centre for disease control (CDC).

Study variables and qualitative research topics: Interviews with providers focused on experiences with buprenorphine treatment delivery, training and technical assistance received, and coordination with other local stakeholders in addressing substance use issues. Interviews with participants explored experiences with buprenorphine treatment, social support and recommendations to improve the treatment.

Tools and methods of data collection: Four researchers who were familiar with the OUD treatment system in Vietnam conducted the interviews. The researchers had no prior relationships with both the providers and the participants. All interviews were audio-recorded, transcribed, and uploaded onto Atlas.ti—software for qualitative analysis (14). Upon the completion of each interview, the interviewers wrote a summary of key findings and questions to explore further in subsequent interviews. Interviews were conducted at the clinics where providers worked, and participants received their treatment. Each interview lasted between 30 and 60 minutes.

We conducted thematic analysis to investigate respondents' experiences with buprenorphine treatment. We first developed a coding frame based on the interview guides. We later added emergent codes during our multiple readings of each transcript. Examples of codes included "We'll be dead if we let buprenorphine leak out," "no physician in communes" or "tablets take too long to dissolve." We compared codes across groups of informants and across provinces. We then organised codes into the 5 emerging themes including one on the appreciation of buprenorphine clinical effects, and four on the challenges to the pilot implementation: a) Limited accessibility due to low treatment coverage and supervised dosing requirement, b) Heavier workload without appropriate compensation, c) "We'll be dead if we let buprenorphine leak out": pressure on providers to prevent buprenorphine diversion and d) Conflict between health programs and the police.

Research ethics: The Institutional Review Board of Hanoi Medical University approved this study (#32/HMUIRB, on 23 August 2019). All participants provided their written consent after being informed of the study's objectives and ethical aspects.

RESUTLS

Participant characteristics

The 18 providers included 3 program managers, 6 physicians, 4 pharmacists and 5 counsellors. All providers except one were from the main clinics. The number of men and women in the sample was equal. The median age of providers was 35 with an average of 5 years of OUD treatment experiences.

All 22 participants were male. The median age of participants was 39. Their median length of buprenorphine treatment was 4 months. Eleven participants (50%) had an education attainment of high school or above. Six participants (27%) were first-time receivers of OUD treatment. Eight participants (36%) switched to buprenorphine from methadone, and eight participants (36%) switched to methadone after having started buprenorphine treatment.

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Appreciation of the clinical effects of buprenorphine

All providers and most (77%) participants appreciated the clinical effects of buprenorphine. Participants generally perceived fewer side effects of buprenorphine such as sedation compared to methadone. Stable participants who got dosed three times per week also reduced their travels. Buprenorphine participants also paid less for treatment as treatment fees were calculated based on the number of days they attended the clinic.

"When I was on methadone, I couldn't do anything. I slept all the time. On this buprenorphine, I feel very sober." (Participant, 4 months in buprenorphine treatment).

"In days that they aren't taking buprenorphine, they don't need to pay. So, buprenorphine patients pay for only 12 days of treatment a month." (Physician, 9 years of experience).

For providers, buprenorphine tablets were easier to transport and to store than methadone solution. Not having to dispense buprenorphine to all participants every day also freed some of their time.

"Patients don't have to take buprenorphine every day. So, if I work a lot today, tomorrow I can work less. With buprenorphine, there is no risk of loss because of spillage." (Pharmacist, 5 years of experience).

Still, five participants among those who switched from buprenorphine to methadone did not perceive the clinical effects of buprenorphine despite the maximum dose:

"I went up to 32 mg but still felt withdrawal. I had to use a lot of heroin to counteract the symptoms." (Participant, 1 month in buprenorphine treatment).

This change of medications because of clinical reasons, however, only accounted for 1.7% of the buprenorphine sample (N=283).

Thus, buprenorphine had proved its efficacy for most participants. However, its pilot implementation in all the three provinces encountered obstacles at program and policy levels that might hinder the long-term impact of the treatment, as reported below:

Challenges to the implementation of buprenorphine treatment

Limited accessibility due to low treatment coverage and supervised dosing requirement

The most common complaint of participants was related to the limited coverage of buprenorphine treatment. As of April 2020, there were only 25 buprenorphine clinics in 8 provinces in the country. This low coverage of the treatment made it difficult for participants who needed to travel for a week or more.

"Many patients here have their families in the lowland. If they take buprenorphine, it'll be challenging to visit their parents." (Counsellor, 9 years of experience).

"I had to switch to methadone because I went back to my hometown in Hung Yen recently. My parents live there, so I need to visit them frequently, but the clinics there don't have buprenorphine." (Participants, 3 months in buprenorphine treatment).

Participants also complained about the time they needed to stay at the clinic waiting for the tablets to dissolve. Given the supervised dosing requirement, staff would not let participants leave without confirming that their buprenorphine tablets had dissolved. This waiting time was significantly longer than in methadone treatment where participants could take their dose in one gulp and leave. This was the reason why some participants decided to switch to methadone.

"This tablet takes long, and I had no time back then. My mum who accompanied me to the clinic couldn't wait for me that long. It took me between 30 and 40 minutes, so I decided to switch back

to the liquid medication." (Participant, 2 weeks in buprenorphine treatment).

"The most important issue is that when taking buprenorphine, I have to stay here for at least half an hour to let it dissolve, but I don't have the time." (Participants, 4 months in buprenorphine treatment).

Thus, the ability of buprenorphine treatment in its current implementation model seemed limited to help participants to achieve a functioning life.

Heavier workload without appropriate compensation

Given the geographical challenges in mountainous areas, it was impossible for many participants to travel to the main clinics for buprenorphine induction. At the same time, communes in the highland often lacked physicians who were qualified for buprenorphine prescriptions. Hence, physicians at the main clinics had to travel hundreds of kilometres to different dispensing sites to induce patients on buprenorphine or to provide technical assistance to the on-site medical staff while they still needed to ensure the work with their own patients at the main clinics:

"It's quite tiring. There aren't many buprenorphine patients, but we need to go to commune to do on-site supervision. And we're just a few." (Physician, 2 years of experience).

A CDC leader who was also head of a methadone clinic provided an example of the serious lack of physicians in remote communes:

"The head of that commune health station only completed middle school. He was then sent to school to get physician assistant training. And that's the only physician in that commune." (CDC leader, 8 years of experience).

He went on to explain how integrating buprenorphine treatment into methadone clinics without additional human resources nor further incentives posed challenges to the existing staff:

"In communes with more than 130 patients, we can hire maximum three staff. They must dispense methadone and buprenorphine every day, over the weekends and holidays. However, they get paid for only 200 extra hours—just a portion of their overtime work." (CDC leader, 8 years of experience).

For these reasons, staff turnover in buprenorphine/methadone programs became common, especially in remote communes. One physician in a main clinic commented:

"To be honest, I'll never accept to work in commune health stations because you cannot live with such a salary. And about workload, there are tens of national programs running by commune health stations in addition to methadone or buprenorphine dispensing. I provide technical assistance to them, and I can see they work really hard. Now many people leave. In some places, we have no one to work." (Physician, 7 years of experience).

"We'll be dead if we let buprenorphine leak out": pressure on providers to prevent buprenorphine diversion

The greatest worry of providers was to ensure dosing supervision to prevent buprenorphine leakage into the black market as this would lead to legal consequences to them. This created great pressure onto providers:

"In case of leakage, we, pharmacists, will be at the greatest disadvantage." (Pharmacist, 5 months of experience).

However, given the high patient load and staff shortage, it was almost impossible for providers to ensure no buprenorphine leakage:

"At weekends, we're only two people on duty. It's impossible for us to dispense methadone and at the same time closely watch patients taking buprenorphine. If someone secretly takes one pill out of his mouth, we won't be able to see." (Physician, 5 years of experience).

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This pressure made providers in general, and pharmacists felt vulnerable and reduced their willingness to provide buprenorphine treatment:

"I just wish that we pharmacists could be more protected, to make our job a bit easier. I feel too tired. I don't want to work with buprenorphine." (Pharmacist, 5 months of experience).

Given the concern regarding buprenorphine leakage, providers in different provinces advised each other to dip the tablets into water before giving to participants. Thus, the tablets would dissolve quicker and were harder to take out intact. This practice, however, deviates from the clinical protocol of buprenorphine administration. Another solution to prevent leakage was not to let participants take all their tablets at once but consecutively. This method significantly increased the time participants had to stay at the clinics and thus, worsened their experiences with treatment. One physician explained:

"Of course, it takes more time. However, we cannot do what the patients want. Otherwise, we'll need to constantly justify ourselves with the police. If they don't accept, we'll give them methadone." (Physician, 5 years of experience).

Conflict between health programs and the police

The conflict between OUD treatment programs and the police over the quota of people who use drugs to be sent to OUD treatment or to compulsory rehabilitation was a significant challenge to increase the number of patients receiving buprenorphine treatment, particularly in one province (Son La). Healthcare staff complained about their patients being sent to compulsory rehabilitation in the middle of treatment:

"Many patients get arrested and sent to [compulsory rehabilitation] while they're receiving medications." (Physician, 5 years of experience).

"He was stabilizing on the treatment, but then the police took him away. After putting in so much effort to take good care of him, he was taken away by the police." (Physician, 9 years of experiences).

Both the health programs and the police had a target number of participants receiving treatment or of people who use drugs being sent to compulsory drug rehabilitation every year. However, the police's target was prioritised over the medical target.

"Each sector cares about its own target (without collaboration). That's why there are patients who have not yet started treatment got arrested and sent to compulsory rehabilitation centers." (Pharmacist, 4 years of experience).

"The police's target has been decided by ordinances, unlike ours." (Physician, 5 years of experience).

DISCUSSION

This qualitative study identified obstacles to the pilot implementation of buprenorphine treatment including limited accessibility to treatment, heavier workload to staff, pressure on providers to prevent buprenorphine diversion, and conflict between the health system and the police. All these obstacles were related to the current programmatic organization of OUD intervention. Such an organisation made it difficult to both patients and providers to benefit from the new treatment.

In the pilot implementation, the superiority of buprenorphine over methadone in terms of safety and fewer dosing restrictions (15, 16) had, however, not been utilized due to concerns about diversion. Required supervised dosing not only discouraged participants from remaining in treatment, but it also put great pressure on buprenorphine providers. Being assigned the responsibility to prevent buprenorphine diversion without means to effectively do so put providers in a stressful situation and led to

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their deviation from clinical protocol to avoid legal consequences of buprenorphine leakage. Given the large workload of and inappropriate compensation for substance use treatment providers, it is possible that Vietnam, like some other countries, will or has been encountering turnover and shortage of qualified staff in substance use treatment (17).

Concerns about buprenorphine misuse and diversions were common among providers in other buprenorphine programs about a decade ago and interfered with their willingness to allow home induction or prescribe adequate doses of buprenorphine (18). While these concerns were reality-based, the assessment of buprenorphine diversion showed that in countries with easy access to opioids like Vietnam, diverted buprenorphine was mainly used for therapeutic purposes (3). Using buprenorphine/naloxone combinations instead of buprenorphine alone, depot injection or implants are strategies to minimize misuse and diversion while expanding treatment access (18). Studies also show that the inability to get access to treatment was a risk factor for using diverted buprenorphine (19). Thus, another strategy to reduce diversion is to expand access to buprenorphine treatment by expanding coverage and simplifying admission procedures.

Integrating buprenorphine treatment into the existing infrastructure and human resources of methadone programs might be a practical strategy to quickly set the new treatment in place. However, the methadone system, especially the programs in mountainous areas, has already struggled with significant financial and human resource challenges to provide services in remote communes (20). Without appropriate support for the added workload, this strategy might increase the dissatisfaction of providers and trigger greater turnover in the program.

The conflict between the health system and the police in Vietnam over the quota of people who use drugs to be sent to OUD treatment or to compulsory rehabilitation has been reported previously (21). Given the emphasis of the current Drug Law on compulsory rehabilitation of people who use nonopioid drugs and the prevalence of methamphetamine use among participants with OUD, it might be challenging for buprenorphine/methadone programs to increase their number of patients.

These challenges outweighed the perceived positive clinical effects of methadone, leading to the Ministry of Health's decision not to expand buprenorphine treatment beyond the pilot. Without effective strategies to resolve such challenges, Vietnam risks not being able to achieve its target number of people with OUD in evidence-based treatment.

Limitations: Our study findings should be examined considering our limitations. Because of travel difficulties, we could interview only one member of staff at the dispensing sites. Although some of our other informants were knowledgeable of the challenges facing dispensing site staff, our findings might not truly reflect the experience of these providers.

CONCLUSION

The pilot implementation of buprenorphine treatment in Vietnam encountered barriers at program and policy levels including 1) enforced measures to minimise diversion limiting access to treatment and put great pressure on providers, 2) lack of financial and human resources to support the additional tasks and 3) conflict between the health system and the police over the quota of people who use drugs to receive maintenance treatment or to be sent to compulsory rehabilitation.

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