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Challenges of methadone maintenance treatment decentralisation from Vietnamese primary care providers' perspectives

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Abstract

Introduction: Decentralising methadone maintenance treatment to primary care improves patients' access to care and their drug and HIV treatment outcomes. However, primary care providers (PCP), especially those working in limited-resource settings, are facing great challenges to provide quality methadone treatment. This study explores the challenges perceived by PCP providing methadone treatment at commune health centres in a mountainous region in Vietnam.

Method: We conducted in-depth interviews with 26 PCP who worked as program managers, physicians, counsellors, pharmacists and medication dispensing staff at the methadone programs of eight commune health centres in Dien Bien, Vietnam, in November and December 2019. We used the health-care system framework in developing the interview guides and in summarising data themes.

Results: Participants identified major challenges in providing methadone treatment in commune health centres at the individual, clinic and environmental levels. Individual-level challenges included a lack of confidence and motivation in providing methadone treatment. Clinic-level factors included inadequate human resources, lack of institutional support, insufficient technical support, lack of referral resources and additional support for patients. Environment-level factors comprised a lack of reasonable policies on financial support for providers at commune health centres for providing methadone treatment, lack of regulations and mechanisms to ensure providers' safety in case of potential violence by patients and to share responsibility for overdose during treatment.

Discussion and Conclusion: PCP in Vietnam faced multi-level challenges in providing quality methadone treatment. Supportive policies and additional resources are needed to ensure the effectiveness of the decentralisation program.

KEYWORDS
decentralisation, methadone maintenance treatment, opioid use disorder, primary care providers, Vietnam

1 | INTRODUCTION

Decentralisation of treatment for opioid use disorders (OUD) such as methadone maintenance treatment (MMT) has been a strategy to optimise resources to expand treatment access and improve patients' outcomes, especially during the COVID-19 global pandemic [1–4]. Decentralisation of MMT increases the number of entry points and enables patients' access to treatment in remote areas where specialised services may be unavailable [5–7]. Decentralisation of MMT has been implemented in several countries across different regions in the world [8–14]. In most Western countries, 'decentralisated treatment' refers to a model where patients with OUD would receive their medications from community pharmacies with prescriptions obtained from general practitioners [2, 12, 15]. Studies in several countries in Europe show that patients who receive MMT through primary care were more engaged and retained longer in treatment with more favourable treatment outcomes (e.g., less drug use and fewer psychological problems) than those receiving MMT in specialised settings [16–18]. On another hand, some studies have reported potentially unfavourable retention rates of patients receiving MMT from the community compared to clinic pharmacies and suggested further studies to explore the reasons [19, 20].

However, reports of experiences in the actual decentralisation of MMT to primary care are limited [21]. Although some studies explore structural barriers [22], most studies to date focus on the experiences of high-income countries and report mainly individual-level challenges such as lack of confidence, lack of support and reluctance to work with people who use drugs [23–29]. We need a greater understanding of what might hinder MMT decentralisation in low-and-middle-income countries at the clinic and environmental levels. We aimed to document the perceived challenges of primary care providers (PCP) related to their responsibilities in administering MMT programs at the commune level in an area of Vietnam. The study results will help inform future interventions to improve MMT decentralisation.

1.1 | The Vietnamese context

Vietnam, a low- and middle-income country, is an ideal setting to address issues related to decentralisation of MMT services. The country started expanding its methadone treatment program nationwide in 2010, after the outstanding achievements of the pilot program in eliminating new HIV infection among people with OUD, significantly reducing illegal opioid use and reducing drug-related crimes [30]. Patients except those in some mountainous provinces pay a small monthly treatment fee (~US$15) to cover non-medication expenses [31]. By December 2021, Vietnam's methadone program served 52,128 people with OUD in 343 clinics, far below its intended target of 80,000 [32]. One reason for this low coverage is the transportation challenges facing patients in mountainous areas to receive their daily methadone dose [33, 34]. To remediate this issue, Vietnam decentralised MMT to community health-care centres (CHC) that are implemented at the local commune level in 2015 [34]. This change allowed provincial and district authorities to decide whether they would implement decentralised MMT and choose the CHCs to become dispensing sites. A main methadone clinic could have more than one dispensing site, depending on their geographical coverage. As of December 2021, there were 232 methadone dispensing sites in 25/63 provinces, mainly in remote and mountainous provinces [32]. The population of Vietnam was 96,208,984 in April 2019 composed of 54 ethnic groups, of which Kinh were the largest group (85.3%), followed by Tay and Thai (each group about 2%) and a series of other smaller groups [35]. Kinh are considered the national ethnicity and others are called 'minority groups'. The Northern midlands and mountains are the main areas in which the ethnic minorities reside with nearly 30 ethnic minorities in these areas [35].

CHCs are responsible to provide primary health care for residents of their commune. They provide a wide range of public health-care services including preventive care for maternal and child health, curative care and hygiene and health promotion [36]. There are about 12,000 CHCs nationwide [37]. As part of the decentralisation, CHC staff were assigned to the methadone program. MMT was added to their usual tasks with limited compensation. CHCs that provide MMT are called 'satellite' sites, as their main role is to dispense the medication to stable patients (i.e., patients receiving no change in their methadone dose for at least a month, good adherence and no illicit opioid use) only. Once patients inducted into MMT at a central clinic meet these criteria, they can ask or be offered MMT through a suitable satellite site. Patients go to such a satellite site (i.e., a CHC) every morning to get their doses. Monthly or bi-monthly examinations and counselling are generally conducted by physicians and counsellors at the main clinic. However, in very remote areas where transportation is challenging, such activities can be performed by staff at the satellite clinic. If any problems (e.g., opioid relapse, dose missing without notice, or other mental or physical problems) occur, patients will be transferred to the main clinic for medication and further intervention but could return to receiving MMT at the satellite site when they are considered stable again [38].

Each CHC has three part-time positions for the methadone program (physician, pharmacist, counsellor). A physician is responsible for physical examination and methadone prescription. A pharmacist (or equivalent medication dispensing staff) is in charge of managing the storage of methadone in the clinic and dispensing daily doses to patients. A counsellor conducts regular check-ups with patients to evaluate treatment adherence and provide counselling or psychological support if needed. A manager oversees and coordinates all activities of the methadone program. This person is often the head or vice-head of the CHC and could also serve as a methadone physician or counsellor. MMT providers at satellite sites receive the same accreditation training as providers at the main clinics, but often without advanced or refresher courses. The accreditation training comprises 1-week didactic lectures and a 1-week practicum in an established MMT clinic. All providers attend a 2-day plenary on addiction basics and methadone pharmacology, then go into a 3-day course designed for their assigned role. MMT providers at the main clinics provide technical assistance to those at satellite sites [38].

1.2 | The adapted healthcare system framework

In examining the question of decentralising MMT care, we employed the four-level conceptual model for healthcare system change developed by the Institute of Medicine (USA) and adapted by Ferlie and Shortell [39, 40]. The four levels included: (i) individual patients; (ii) the care team including both professional care providers and family members; (iii) the organisation that supports the work of care teams by providing infrastructure and complementary resources; and (iv) the political and economic environment [39]. The model helps explore barriers and facilitators experienced by grassroots-level providers in implementing health-care interventions [41]. In this study, we focused on the challenges at three of these levels that would affect providers' performance in delivering decentralised MMT. Our challenges were classified into three levels: individual (i.e., providers or the care team), clinic (i.e., organisation) and environmental (i.e., policies, socioeconomic conditions). The study aimed to identify strategies to improve MMT decentralisation in Vietnam.

2 | METHODS

This qualitative analysis is part of a mixed-method cross-sectional study exploring the challenges facing the MMT decentralisation program in Vietnam. The study took place between November and December 2019 in Dien Bien—a mountainous province in the Northwest of Vietnam with an important HIV-drug injection syndemic. Dien Bien was among the first provinces to implement MMT decentralisation in 2015. At the time of this study, its MMT program had reached 29 CHCs. The decentralisation model of Dien Bien follows the national guidelines for implementation [38].

We purposively selected 8 out of the 29 CHCs of Dien Bien to ensure diversity in geographic areas (i.e., urban vs. rural), current number of MMT patients and years of providing MMT services. In rural areas, patients may have to travel up to 30 km (which may take about 2 h one-way) to their CHC for daily dosing. Four CHCs have about 20 patients, three CHCs have 60–100 patients and one CHC has only 2 patients. At each CHC, we invited all PCP who had been working there for at least 3 months and who were currently involved in the MMT program, either in management or clinical practice. No participants declined to participate in the study. Participants provided their verbal informed consent before the interviews started. In total, we conducted in-depth interviews with 26 PCP.

The topics of interest centred on participants' experiences of the decentralised MMT program at CHCs, perceived challenges and support in their daily practice, and suggestions to improve the program. We collected demographic data (age, gender, education and years of experience) at the beginning of each interview. Interviews lasted between 90 and 120 min, and were audio-recorded and transcribed verbatim. Names and other personal identifiable information were removed from the transcripts. Participants received VND 200,000 (∼US$10) for their time and effort.

Our analysis was informed by the thematic analysis approach [42]. Upon completion of each interview, the two interviewers (Nguyen Bich Diep and Dinh Thi Thanh Thuy) summarised salient themes and noted their observations. The first author developed an initial set of codes based on the topics of interest and highlights in notes. She then read all transcripts multiple times before coding to immerse herself into the participants' accounts. She added new codes as they emerged from the close reading throughout the analytical process and summarised salient themes. Some examples of codes include: (i) at the individual level: training needs, work pressure, attitude towards people who use drugs and the MMT program, motivation to work and any safety concerns; (ii) at the clinic level: leadership, referral resources, human resources, colleague support, institutional support; and (iii) at the environmental level: local environment, MMT management system, relevant law/regulation and

financial policies. The study team met regularly to discuss these themes and triangulate them with the findings from the quantitative component. Summaries of themes were translated into English to facilitate the discussion. We used ATLAS.ti 8 (Berlin, Germany) to handle the data. The Institutional Review Boards of the University of California, Los Angeles, United States and Hanoi Medical University, Vietnam approved the study.

TABLE 1 Demographic characteristics of in-depth interview participants ($N = 26$).

Characteristics	Number	%
Gender		
Male	12	46
Female	14	54
Age		
≤29 years	10	38
30–39 years	13	50
≥40 years	3	12
Ethnicity		
Kinh	18	69
Thai	7	27
Other	1	4
Position in MMT program[a]		
Manager	8	31
Doctor	5	19
Counsellor	6	23
Pharmacist	3	11
Medication dispensing staff	7	27
Years of medical training		
Graduate (≥4 years)	5	19
College (3 years)	5	19
Lower (≤2 years)	16	62
Length of MMT experience		
≤12 months	4	15
13–36 months	13	50
>36 months	9	35

Abbreviation: MMT, methadone maintenance treatment.
[a]Participants could have more than one role in the MMT program.

3 | RESULTS

Of all 26 participants, 14 (54%) were female, 18 (69%) were of Kinh ethnicity and 13 (50%) were between 30 and 39 years. Regarding participants' positions in the methadone program, 8 (31%) were program managers, 5 (19%) were physicians, 6 (23%) were counsellors and 10 (38%) were pharmacists or medication dispensing staff. Some program managers also worked as MMT physicians or counsellors. Only five physicians had completed the 5-year medical education; participants in other positions had 3 years or less of medical education. At the time of the study, 13 participants (50%) had between 1 and 3 years of experience and 9 (35%) had more than 3 years of experience in the MMT program (Table 1).

As indicated, we categorised challenges perceived by PCP into three levels: (i) challenges at the individual level directly related to PCPs themselves; (ii) factors at the clinic level related to their MMT work at CHCs; and (iii) environmental level factors including structural factors at a macro level (Table 2). In most cases, the factors interrelated to shape participants' experiences of the decentralised MMT programs.

3.1 | Individual level

The main individual-level challenges for providing MMT at CHCs consisted of practitioners' lack of confidence and of motivation to work with patients. These challenges might result from suboptimal working conditions.

3.1.1 | Lack of confidence to provide care for MMT patients

Unmet technical support needs were the main reason for participants' lack of professional confidence in MMT. Although most CHCs had provided MMT for at least 2 years, most practitioners received no continuing or advanced training. The basic knowledge in the initial accreditation training, however, was insufficient for them to deal with day-to-day clinical issues. Moreover, while providers at satellite clinics were supposed to take care of

TABLE 2 Perceived challenges of providing MMT in primary care.

Individual-level factors	Clinic-level factors	Environment-level factors
• Lack of confidence • Lack of motivation	• Inadequate human resource • Lack of institutional support • Insufficient technical support • Lack of referral resources	• Lack policies to support the MMT program at CHC • Lack of policies to protect service providers

Abbreviations: CHC, community health centres; MMT, methadone maintenance treatment.

stable patients only, some programs located far from the district centre still need to conduct patient induction and dose adjustment due to patients' travel difficulties. Their needs for training and technical support were thus greater.

> 'Sometimes patients tell me they took such and such medications and ask if it's OK. I don't know. We need more training to answer them'. (Female, 33 years old, dispensing staff, 1.5 years of experience)

Since the accreditation training was insufficient, it was challenging for providers to apply what they learned in actual encounters with patients. They were also not confident in dealing with unusual clinical situations like opioid overdose.

> 'While I provide them with counselling, I feel like they aren't really open to me. Maybe it's because of the way I ask questions'. (Female, 31 years old, counsellor, 1.5 years of experience)

The accreditation methadone training hypothesised that each provider would have their own responsibilities in the clinic as it had separate, parallel courses for physicians, counsellors and pharmacists. However, PCP in most CHCs had to assume different positions due to staff shortages. For example, counsellors might also dispense medication when they had no clients. Vice versa, pharmacists could do counselling when their colleagues were unavailable. These staff could also help physicians write daily prescriptions and fill out medical records. Moreover, as all clinical activities were now required to be managed online, some PCP felt they were not competent to do the job.

> 'I'd like to be trained on counselling, because I'm still providing patients with counselling without a counselling certificate. I'm afraid that what I'm doing isn't correct'. (Female, 27-years-old, dispensing staff, 4 years of experience)

The challenge to provide quality care was heightened by PCPs' difficulties in communication with patients and their family members. While many PCP were of Kinh ethnicity, most of their patients came from ethnic minorities and were not fluent in the national language.

> 'I don't know if people from other ethnic groups understand everything I say. [...]. They go to a counselling session, but they don't talk much'. (Female, 31-years-old, counsellor, 1.5 years of experience)

3.1.2 | Lack of motivation to work in MMT programs

Working in the MMT program was not the choice of most PCP. They were assigned to the program by their supervisors. Many considered working in MMT to be a burdensome responsibility with no benefit or interest.

> 'That work is obligatory! We have to work at weekends and holidays. And we can hardly count the extra hours. It takes a lot of time. [...]'. (Male, 34-years-old, clinic head and physician, 2 years of experience)

As the above physician complained, MMT provision was demanding. Because of the requirement for daily observed dosing, staff had to give up on their days off. Given that most PCP lived far from the CHCs, their commuting time was significant.

> 'At weekends, I finish work at around 9 a.m. and go home at 10 a.m. 100 kilometres both ways. I sleep here Friday night and go home on Saturday morning after work, then I come back here on Sunday'. (Male, 31-years-old, clinic head and counsellors, 2 years of experience)

Providing MMT was only one of the many responsibilities that PCP at CHCs had to undertake. However, this took a lot of their time, especially when they also worked at the main clinic to induce patients on the medication. This heavy workload undermined the quality of their treatment.

> 'In CHCs like mine, we have a lot of responsibilities, and it's very difficult to do MMT well. Sometimes I have to examine the patients during the day and fill out their medical records at night'. (Male, 34-years-old, physician, 1 year of experience)

Concern for personal safety was another reason for providers' hesitancy to work in MMT programs. Concerns about the potential for violence in case of conflicts with staff were common. However, this perception of violence seems to come from a more structural problem and of the stigma methadone providers had towards patients. Some providers might also worry about the health risks of working with people who use drugs and of daily contact with methadone.

> 'These addict patients are kind of reckless. I'm quite afraid of them. If we raise our voice, if we argue with them, they're ready to pull their

knives out of their pockets. Some do bring knives with them'. (Female, 34-years-old, clinic head, 3 years of experience)

Although the above challenges may make PCP hesitant to work in the methadone program, most of them did not stigmatise people with OUDs. As many providers live in the same commune with their patients and frequently do outreach work, they know well their patients and patients' families. In mountainous areas, many minority groups have a tradition of using opium to relieve pain and seek comfort. The arrival of heroin, a more potent opioid, has seen it quickly become commonly used [43]. Many PCP in our study had witnessed their friends and relatives gradually became heroin dependent. Being a member of the commune and understanding the local culture meant that most PCP did not perceive addiction as a social evil, which explained their sympathy for their patients.

'I have friends who got addicted to drugs. Some died from drug-related issues, so I have sympathy for them. The people here ... they're poor but still smoking opium. I feel no problem working with them. I was born here in Dien Bien at the time when people started injecting drugs'. (Male, 36-years-old, clinic head and physician, 1.5 years of MMT experience)

3.2 | Clinic-level factors

3.2.1 | Inadequate human resources

Physicians at CHCs were responsible for patient examination and methadone prescriptions. However, since physicians were scarce at the commune level, they were likely to be the head of their CHCs and be responsible for other tasks. Such work required them to frequently travel away from the clinic while still having to be legally accountable for their MMT patients as treatment physicians. This was of concern to our participants.

'It's tiring to do a lot of part-time jobs. It's worrisome too. Whenever I travel for business, I'm so afraid that something might happen. Because I sign prescriptions, if anything happens, I'll be in charge. I remember that day ... it was the fourth day after the induction, the patient got a dose increase in the morning. His family brought him to the clinic in the afternoon as he was agitating. I was in a meeting in the district centre. I had to instruct my staff trying to recover him ... It's quite scaring'. (Male, 36-years-old, clinic head and physician, 1.5 years of experience)

Most CHCs at the time of our interviews had at least one full-time staff (with a 1-year contract) for the MMT program. This setup had been effective when non-governmental organisations still supported the programs. However, as the financial support was reduced, provincial leaders considered removing this position; district leaders were empowered to decide when and how to do that. Most PCP were worried about the situation, especially in CHCs with a large number of patients.

'Next years, many CHCs will need to integrate MMT into their existing programs. But to provide methadone every day for fifty or sixty patients, it'd take one full-time staff. After dispensing medication in the morning, in the afternoon, she'd need to fill participants' medical records and complete other administrative works'. (Female, 34-years-old, clinic head, 3 years of experience)

3.2.2 | Lack of institutional support

How well the decentralised MMT program worked seemed to depend on the support of local leaders. Providers in some CHCs were frustrated by the lack of attention and support from the head of the CHCs and of district health-care centres in recruiting patients and in ensuring safe work conditions for staff. For example, a significant challenge for pharmacists working at CHC sites was that they had to travel to the main clinics in district centres to get methadone every month. Although methadone is a highly controlled medication for which any loss must be legally reported, their managers did not provide them with safe transportation and other security measures. These pharmacists had to transport methadone by themselves and constantly worry about the methadone bottles they carried on the way. One dispensing staff voiced her disappointment:

'In general, my district director doesn't pay any attention to this treatment. When I sent him reports, he just asked about the number of patients. He said that if patients didn't pay treatment fees, we'd stop giving them medications. He'd never said we need to provide patients with more counselling ... The commune leaders are even worse. I've never seen them here. We have requested commune staff to go with us to villages to provide residents with information, but they've never cooperated

with us'. (Female, 32-years-old, dispensing staff, 1.5 years of experience)

Providers in the few CHCs that received good support from their managers and local leaders were much more satisfied and felt more motivated at work.

> 'The leaders of this district care a lot about methadone and other harm reduction programs. They truly appreciate this treatment. They ensure that we can use our leave. They send us to training and pay our extra-working hours'. (Male, 28-years-old, pharmacist, 4 years of experience)

The solidarity among co-workers somehow counteracted the lack of institutional support in many CHCs. Although everyone was busy, providers in MMT programs supported each other in their daily tasks.

> 'Our colleagues from other services could come over to help us with methadone dispensing and vice versa, we'd help them when we're available'. (Male, 28-years-old, pharmacist, 4 years of experience)

In terms of infrastructure, not all CHCs met the criteria of a standard MMT clinic with separate rooms for methadone dispensing, counselling and urine testing. Without privacy, it was difficult to ensure confidentiality in counselling. Some CHCs did not have a camera to keep track of the methadone storage and delivery. This made their staff worry about the safety of the medication they oversaw. The lack of medical equipment for an emergency also made them feel incapable to provide quality care. Although overdose rarely happened, participants still worried about how to deal with accidental overdose because some CHCs did not have emergency equipment (e.g., oxygen ventilator) and were located far from a general hospital. In addition, although naloxone was available in all MMT clinics at the beginning, it was often not restocked.

> 'If an overdose happens, it'd be very challenging. We have insufficient means to deal with it. We are also very far from the hospitals, it would take so long to call a taxi and driving patients on our motorbike is not safe'. (Female, 26-years-old, dispensing staff, 2 years of experience)

3.2.3 | Insufficient technical support

Although PCP at CHCs were supposed to receive technical support from the main clinic when they needed it, there was no mechanism to ensure systematic support.

> 'The staff at the main clinic might not be available when I call them. [...] They can help us only when they find some time, not when we need them most. It's like we ask for their favour. Their main job is not to provide technical assistance'. (Female, 29-years-old, counsellor, 4 years of experience)

Moreover, when support was available, it did not always meet PCP's needs.

> 'We do everything. If we have questions on the procedures, we may call the main clinic, but they can't teach us skills or how to deal with actual cases. We can only learn from our own experiences'. (Male, 34 years old, clinic head and physician, 2 years of experience)

3.2.4 | Lack of referral resources and additional support for patients

While one of the responsibilities of PCP was to refer patients to appropriate medical services, these services were often inaccessible in remote areas. Basic tests including screening for HIV and hepatitis and liver and kidney functions could be conducted for most patients at the intake check-up at CHCs. However, additional services like regular HIV or hepatitis tests, on-site antiretroviral therapy or tuberculosis screening were available only at district health-care centres. PCP also had little information about locally available resources. Moreover, even though PCP referred patients to a clinic at upper levels, for example, district- or provincial level clinics, patients would not comply due to commuting difficulties and stigma concerns.

> 'I told them they should go to the district medical centre to do their lab tests. However, they never go. They only come to ask us. They are fear of stigma'. (Female, 26-years-old, dispensing staff, 2 years of experience)

3.3 | Environmental level

3.3.1 | Lack of supportive policies

Despite the decentralisation of MMT at CHCs, this treatment had not been officially formulated in the PCP's job descriptions. No regulation clarified how the decentralised program would be implemented and how it would be staffed. Also, there was no formal regulation that allowed starting new patients on MMT at dispensing sites.

> 'We need official documents stating that CHCs have to provide MMT and with such additional workload, what would be our compensation?' (Male, 34-years-old, physician, 1 year of experience)

One participant mentioned that the decentralisation of MMT might conflict with 'the new countryside development' plan of the government. This strategy focuses on the effective implementation of agricultural restructuring, rural economic development and sustainable urbanisation process. To meet the new countryside standard, a commune would have no 'known' drug user in the commune. This might prevent people who use drugs in the commune from disclosing their drug use status and getting into treatment.

Competition among MMT clinics in the area might undermine the decentralisation. The main clinics were reluctant to refer their patients to other clinics because they needed to meet their target number of patients. CHCs also needed to meet their target caseload to keep their staff and maintain their activities. For example, a full-time position at CHCs could be removed if the number of methadone patients was below 30.

> 'The methadone clinic at the provincial AIDS centre wants to keep their patients there. Because if they send patients to CHCs, they'd have not enough patients'. (Male, 36-years-old, clinic head and physician, 1.5 years of experience)

Most PCP felt frustrated with the inadequate financial support for their work in the MMT program. Although providers had to work over weekends and holidays to ensure the daily dosing schedule, they were paid only for less than half of the actual extra hours they had done. The paid extra hours were decided by the number of MMT patients currently at CHCs, not their actual working hours. The labour law that had been established before MMT programs also set a ceiling to the number of extra hours they could be paid (200 h per provider per year). With additional responsibility, they did not get any bonus either.

> 'It is unjust that we cannot get paid for more than 200 extra hours. It should calculate our hours differently. [...] For us, it's like working for nothing'. (Female, 46-years-old, pharmacist, 4 years of experience)

Although health-care staff working with high-risk populations including HIV and people who use drugs were entitled to extra allowance, in methadone programs, only the physician position received this allowance. This was seen as unjust since counsellors and pharmacists did not work less than physicians with high-risk patients.

> 'I think everyone working in the methadone programe should receive that allowance, in terms of money or other substitutes'. (Female, 39-years-old, pharmacist, 3 years of experience)

3.3.2 | Lack of policies to protect providers

PCP at CHCs felt insecure about their job in the MMT program because the existing law only protected providers at methadone clinics, not PCP who provided MMT as their part-time job, in terms of clinical practice. Such laws did not consider the fact that PCP at CHCs had to assume multiple responsibilities and could not always be responsible for their patients.

While physicians were the only staff who could be legally responsible for methadone prescription and related clinical issues, and given the scarcity of physicians, assistant physicians or other staff could take care of physicians' duties, especially when the physicians were not available at CHCs. However, there was no policy to protect the physicians or to share their responsibility with other staff. If something happened while they were not there, they would still be held accountable.

> 'Legal documents require that physicians must sign on all prescriptions. They should have some articles on how to do when the physicians are not there and if there were only assistant physicians. These regulations would protect physicians'. (Male, 36-years-old, clinic head and physician, 1.5 years of experience)

4 | DISCUSSION

The study highlighted major challenges faced by PCP to implement a decentralised MMT program at multiple levels, including individual, institutional and environmental levels. Recognising these challenges would be important for local leaders, policymakers and other stakeholders in improving the quality of a decentralised MMT program.

At the individual level, the lack of confidence and motivation in providing services meant PCP were unable to work as effectively as they could in the MMT program. These findings are consistent with previous studies that also emphasised the role of experience, competence and

financial remuneration for PCP to do their methadone work [5, 22, 23, 27, 44]. Providing more substance use disorders-related training and systematic technical support is important to build PCPs' confidence in providing MMT. Specifically, besides regular training, other training on knowledge and skills to work with patients of minority ethnicities would help improve treatment quality. Regular technical support in dealing with special problems, such as an overdose or working with 'difficult' patients would help improve the MMT expertise of PCP and thus, build their confidence. In addition, the challenges for PCP in Vietnam could be different from Western countries with different cultural practices (e.g., opium smoking) underpinning the development of OUD. Many of the general practitioners who prescribe MMT are also running busy primary care clinics for other people in the commune. Thus, they may get a greater burden from not only providing substance use disorder care but also fulfilling other primary care responsibilities at the CHC [35].

On the other hand, being acknowledged and receiving adequate compensation would be helpful to motivate PCP in their MMT work. These potential solutions are closely related to other challenges at higher levels including institutional support and national policies/regulations. In addition, it should be noted that most PCP in our study did not express stigmatising attitudes nor reluctance in working with people who use drugs, unlike what studies in other countries showed [5, 29, 45].

At the clinical level, we found that leadership was an essential part of a successful implementation of the decentralised MMT program. At the time of this study, there was no clear rule or regulation on the implementation of MMT at CHCs, except a decree on implementing methadone dispensing sites in general. Thus, provincial and district leaders had all authority over the actual implementation of MMT programs in their provinces and districts. While the districts should have a comparably similar public budget as they are in the same province, their budget for the MMT program varied and seemed to depend on the willingness of the commune-level leaders to allocate resources to the program. Overall, we found different facility investment and support mechanisms for MMT programs among different districts and CHCs. These factors may have a great impact on PCPs' motivation to work in MMT. Each district and CHC, theoretically, could have enough budget to run the MMT program by themselves with the treatment fee if they have a reasonable number of patients. Since the cost of methadone and the basic salary of staff are covered by the government, they could use the treatment fee from patients to incentivise providers or to maintain a full-time staff to support the daily activities. This strategy would motivate PCP to improve their treatment quality to attract more patients [46]. Currently, most PCP do not receive any incentives for their extra responsibilities in the methadone program. The patients' treatment fees will go to the local district budget. A CHC will receive an annual administrative and logistic budget to implement methadone services from the district health centre but not extra budget for staff salary. This payment mechanism does not motivate PCP in their MMT responsibilities therefore could affect treatment outcomes. However, we did not collect any information on how treatment fees were spent in Dien Bien to enable more concrete recommendations.

At the environmental level, legal infrastructure plays a crucial role in implementing any medical treatment, especially in programs such as MMT where PCP have to provide a strictly regulated medication to a marginalised population [47]. PCP perceived the lack of policies to support MMT programs at CHCs and to protect methadone providers as the main barriers to their work. Policies should be available to provide reasonable compensation for the additional workload and working time of staff. When such policies are available, district leaders would have a legal basis to ensure a fair incentive mechanism across different CHCs. In addition, there should be a law of shared responsibilities to protect providers, especially physicians. With limited human and facility resources at CHCs, a protective law would make providers feel safer and more confident in providing methadone services. As discussed above, challenges at different levels interacted; environmental factors would impact factors at the network and individual levels. One of the main challenges that affect cross-level is the inflexible design of the program.

Many of these challenges appear to result from the inflexibility of the program that requires daily observed dosing. To counter this, the government started piloting a take-home program in April 2021, during the fourth wave of COVID-19 in Vietnam [48]. Dien Bien is one of the three provinces piloting the program. Based on the positive preliminary outcomes after 1 year of implementation, the government decided to scale up the pilot program to three more provinces in 2022 and potential national implementation in 2023, even after the pandemic has abated. This strategy is expected to make MMT less restrictive and reduce the workload of methadone staff, resulting in a positive impact on the treatment outcomes of patients. The take-home policy in combination with decentralised treatment would help maximise access to treatment of patients. They could receive take-home doses from a central clinic (which could be far from their home) or daily doses from a decentralised clinic (i.e., a CHC in their residency area) or, in the best scenario, they could receive take-home

doses from a CHC. The last option would work best for patients in the mountainous areas where it may take a whole day for patients to travel to the nearest CHC or it may even be inaccessible during challenging weather (e.g., after a storm or during rainy seasons).

The most important limitation of the study is the lack of opinions from other people that were involved at the commune level, for example, local people's committees, law enforcement and local police, who also have important roles in implementing the MMT program at the commune level. In addition, the voices of patients receiving methadone services at CHC, if they had been collected, would have contributed to a clearer picture of the challenges of the program at different levels. Lastly, the data were collected from a mountainous region with multiple ethnic minorities. The lower education level of residents and the availability of illicit drugs might pose different challenges to other local PCPs in providing MMT at CHCs in other provinces in Vietnam. Nevertheless, our findings may help improve the effectiveness of the decentralisation program in general.

5 | CONCLUSION

Continuing education and systematic technical support are important to build PCPs' confidence in providing methadone services at CHCs. Policymakers and local authorities should recognise and respond to the needs of service providers to ensure the treatment quality and the effectiveness of the program. The government should ensure the infrastructure and legal basis to support the MMT program at CHCs and to provide service providers with adequate compensation. Future interventions to improve the decentralised models of MMT should consider the multileveled challenges for PCP to be effective.

AUTHOR CONTRIBUTIONS

Diep Bich Nguyen: Conceptualisation, analysis, writing. **Trang Thu Nguyen:** Conceptualisation, writing. **Chunqing Lin:** Conceptualisation, review. **Thuy Thi Thanh Dinh:** Conceptualisation, analysis. **Giang Minh Le:** Conceptualisation, review. **Li Li:** Conceptualisation, review, funding acquisition.

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CONFLICT OF INTEREST STATEMENT

The authors have no conflict of interest.

ETHICS STATEMENT

Ethics approval was received from University of California, Los Angeles, United States (No. 19-001785) and Hanoi Medical University, Vietnam (No. 03).

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