

ORIGINAL ARTICLE

# The model and role of Migrant Health Volunteers (MHVs) in Disease Prevention and Control (DPC) along Thailand's border with Myanmar, Lao PDR and Cambodia

Boodsanee Mujarin<sup>1</sup>, Orathai Srithongtham<sup>2</sup>, Worayuth Nak-ai<sup>3</sup>, Taweewun Srisookum<sup>4</sup>

<sup>1</sup>The Office of Disease Prevention and Control, Region 10 (ODPC 10th), Ubon Ratchathani, Thailand

<sup>2</sup>Innovation and research development Section, ODPC 10<sup>th</sup> Ubon Ratchathani, Thailand

<sup>3</sup>Department of Research and International Relations, Sirindhorn College of Public Health, Chonburi, Thailand

<sup>4</sup>School of Public Health, University of Phayao, Phayao, Thailand

**Corresponding Author:** Worayuth Nak-ai **Email:** worayuth@scphc.ac.th

**Received:** 16 December 2023 **Revised:** 16 March 2024 **Accepted:** 25 March 2024 **Available online:** May 2024

**DOI:** 10.55131/jphd/2024/220210

## ABSTRACT

This study aims to synthesize the model and the role of migrant health volunteers (MHVs) in DPC, supporting public health operations and promoting migrant access to health services along the Thai border with Myanmar, Lao PDR, and Cambodia. The study areas comprised six Provinces. The MHVs subjects included 75 people and stakeholders engaged in border health work included 84 people. The tools included a questionnaire and interview guide. Data were collected through both group and individual interviews. Quantitative data were analyzed using descriptive statistics, while qualitative data were analyzed using content analysis.

Two models were the paired working model involved an individual MHVs co-worker between Thailand and public health volunteers in neighboring countries with different names such as MHVS buddy, Xiao (friendship), and Xiao Sukkhapap (health friendship), and the specific MHVs workgroup model, they were residing together as a community and mainly classified according to the characteristics of the MHVs. Two MHVs' roles were the first, to operate and support the work of public health officials in disease surveillance and DPC were found at level 5 (mean = 12.85, SD = 2.86). The activities comprised acting as a health dam to prevent Communicable Diseases (CD), an event report, a co-worker with the Surveillance Rapid Response Migrant Team (SRRMT), and a campaign to provide knowledge and facilitate coordination between the government and the hard-to-reach ethnic minorities group at village and district levels. The second role involved promoting access to medical care for migrant workers found at level 4 (mean = 28.52, SD = 8.02). The activities were to facilitate and coordinate channels for accessing health care services, conduct home visits, and enable communication. MHVs are essential to DPC within the migrant worker community and strengthen support for health personnel for surveillance and DPC at border areas.

## Key words:

Disease Prevention and Control (DPC); Migrant Health Volunteers (MHVs); Border

## Citation:

Boodsadee Mujarin, Orathai Srithongtham, Worayuth Nak-ai, Taweewun Srisookum. The model and role of Migrant Health Volunteers (MHVs) in Disease Prevention and Control (DPC) along Thailand's border with Myanmar, Lao PDR and Cambodia. *J Public Hlth Dev.* 2024;22(2):119-130  
(<https://doi.org/10.55131/jphd/2024/220210>)

## INTRODUCTION

Thailand has 31 provinces bordering countries and 67 international entry checkpoints.<sup>1</sup> According to the Immigration Bureau, from 2002 to 2014, the number of foreigners traveling in and out of Thailand increased every year. The average was 11% yearly.<sup>2</sup> Under the project of Thai health insurance, only Thai nationals can access health services, especially in border areas. This affects ethnic minority groups, and illegal migrants cannot access health services due to the limitation of money and the obstacle of using different languages to communicate.<sup>3</sup> Thai government hospitals face problems when caring for migrants, including the burden of providing health services and covering medical expenses to treat communicable diseases (CDs), and non-communicable diseases (NCD), and to provide maternal and child healthcare.<sup>4-5</sup> Furthermore, they encounter problems regarding language, communication and cultural differences, creating obstacles to accessing health services, challenges of border health facilities, and preventing and controlling epidemic diseases in migrant and non-Thai populations.<sup>6-7</sup>

In the afore-mentioned situation, to prevent the impact on Thais' health from migrants, proactively providing healthcare to the migrants is necessary. This can be achieved by developing Migrant Health Volunteers (MHVs) or Foreigner Health Personnel (FHP) in the community or workplace to cooperate with Thai public health officials. Qualified candidates can read and write in their language and have the ability to communicate in Thai. They are ready to perform public health work for the immigrant population as an assistant to public health personnel, to provide health education to community members to understand and change health behaviors, and to supervise CD in the community. FHP, who are personnel of health care units in areas with a high number of migrant

workers, are provided a salary from the health insurance system for migrant workers. The MHVs, on the other hand, are migrant volunteers who provide potential promotion and development the same as FHP but without salary.<sup>6-7</sup> The role of MHVs has been recognized in DPC,<sup>10</sup> supporting health services and public health operations for migrant workers.<sup>11-12</sup> and in proactive work in both disease prevention and control and supporting self-care and health promotion among migrant workers.<sup>13-14</sup>

Having MHVs/FHP can reduce the gap in health service accessibility, enhance efficiency in DPC, and improve the quality of health services for migrant workers. The Provincial Public Health Office (PPHO), government agencies, and NGOs in certain areas continuously monitor the potential development of MHVs and FHP.<sup>15</sup> The 26 provinces are targets where the public health office should be supported in solving problems and developing border public health work. The Department of Disease Control's (DDC) roles include controlling CD in border areas, developing the IHR entry checkpoint,<sup>16</sup> and developing plans and measures for international DPC. Two measures are: improving the efficiency of the system for DPC; addressing health hazards; and improving the ability to provide health services in special economic development zones.<sup>17</sup>

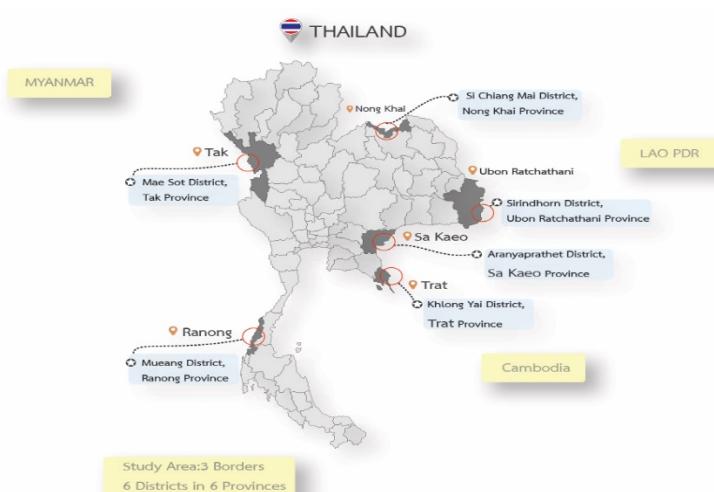
The public health collaboration in DPC along the border with Cambodia and Myanmar remains a continuous effort. The MHVs are important because they help in operating under the border in terms of health collaboration and health communication with migrants and act as a community mechanism to care for migrants within Group.<sup>18</sup> MHVs and FHP play an important role in border public health work in the aspect of DPC in terms of CD surveillance and participation in activities to prevent and control CD, as well as the role of supporting public health operations with the family doctor team, consumer

protection, village health management, and co-workers of VHV. Each area possesses a different context, leading to different methods for obtaining the MHVs's working model. The research question is: what is the operational model and role of MHVs in DPC, and what is the pattern of MHVs obtained in each area? The study's objectives are to synthesize the model and role of DPC, consisting of CD surveillance, participation in DPC activities, and support of public health operations consisting of participation in the family doctor team, consumer protection, village health

management, and co-workers of VHV, among MHVs along the border between Thailand and Myanmar, Lao PDR, and Cambodia.

## METHODS

This mixed-method, convergent design, one-phrase research design<sup>19</sup> intends to study the MHVs' role in DPC at the border between Thailand and Myanmar, Lao PDR, and Cambodia. The study areas comprise six provinces (Picture1).



**Picture 1.** The study areas for six provinces at border of Thailand and Myanmar, Loa PDR, and Cambodia (sited from <https://github.com/BorntoDev/Thailand-Map-Vector>)

Two target groups were: (1) stakeholders engaged in the MHV operation for DPC in the trans border areas of Thailand and Myanmar; (2) Lao PDR and (3) Cambodia. Purposive sampling belongs to the inclusion criteria at the provincial, district and sub district levels. The representatives comprised 14 people per province; the total number was 84.

For MHVs, the sample size was calculated using the N4studies Program, Version 1.4.1.<sup>20-22</sup> The sample size totaled 61 people and was selected together with the specific qualification of each province, which was 10 to 15 people per province.

When calculating the data loss at 20%, the number 12.2, was combined with the calculated sample size of 73.2, namely, 74 people. The MHV sample size from the field totaled 75 people.

The questionnaire consisted of three parts: part 1 comprised general data, part 2 covered the MHVs' role in DPC, and there were eight questions<sup>23</sup> with a total score of 16 points, while part 3 involved the MHVs' role in supporting migrant access to health services, with 19 questions and a total score of 38 points. Parts 2 and 3 were classified into 5 levels.<sup>24</sup> Two semi structured interview guides were incorporated about

the MHVs' role, operation in DPC and promotion, and support of migrant access to health services. Data collection involved individual, group and in-depth interviews.

Quantitative data were analyzed using descriptive statistics, and qualitative data was used for typology analysis, interpretation and drawing conclusions, which were then synthesized to create the model.

**Ethics** issues have been certified by the Ethics Committee for Research in Human Subjects (DDC, No. FWA 00013622).

## RESULTS

The MHVs group consisted of 75 people, most were female (97.3%), aged 40 to 49 years (38.79%), possessed a career (48.0%), worked as MHVs for 2 to 3 years (38.7%), provided performance development

within two years from the Subdistrict Health Promotion Hospital (SHPH) (72.0%), university (54.7%), district hospital (24.0%), and PPHO (13.3%), respectively. The key informants for qualitative data totaled 84 people; most were female (66.67), aged 36 to 50 years old (42.86%), working in the PPHO at the same rate as in the SHPH (28.5%). They were equally from Ranong and Ubon Ratchathani Provinces (17.85%), from Trat, equal to Nong Khai Province (16.67%) and from Sa Kaeo, equal to Tak Province (15.48%).

MHVs' role in supporting the operation of public health personnel for DPC at trans-border areas was found to have an average score of 12.85 (SD = 2.86), level 5, and was in Trat (mean = 13.33, SD = 2.15) and Ranong Provinces (mean = 15.27, SD = 1.01) (Table 1)

**Table 1.** Mean, SD and level of MHVs' role to support health personnel in aspects of disease prevention and control, classified by province

Role	Thai-Lao PDR		Thai-Cambodia		Thai-Myanmar		Total
	Ubon	Nong Khai	Sa Kaeo	Trat	Ranong	Tak	
1. In the past 2 years (2017-2018), migrant workers were injured or a need was noted for health services (promotion, prevention, treatment, rehabilitation).	14 (63.6)	8 (80.0)	8 (80.0)	12 (100.0)	11 (100.0)	6 (60.0)	59 (78.7)
2. You have published public relations, transfer knowledge, notification of public health news, and advise the community.	20 (90.9)	9 (90.0)	7 (70.0)	11 (91.7)	11 (100.)	7 (70.0)	65 (86.7)
3. You have reported abnormal events in the community to the authorities.	10 (45.5)	2 (20.0)	7 (70.0)	8 (66.7)	10 (90.9)	6 (60.0)	43 (57.3)
4. You are involved in the campaign, motivate migrants be responsible for themselves, the community, and the environment of society.	18 (81.8)	6 (60.0)	10 (100.0)	11 (91.7)	9 (81.8)	4 (40.0)	58 (77.3)
5. You are a health leader or a leader in changing the health behavior in foreign communities and transferring those practices to others.	15 (68.2)	8 (80.0)	6 (60.0)	8 (66.7)	11 (100.0)	5 (50.0)	53 (70.7)
6. You participate in organizing activities to promote health, surveillance, prevention and disease control, and solve basic community public health problems according to community measures involving active participation and cooperation.	21 (95.5)	5 (50.0)	7 (70.0)	9 (75.0)	10 (90.9)	7 (70.0)	59 (78.7)

Role	Thai-Lao PDR		Thai-Cambodia		Thai-Myanmar		Total
	Ubon	Nong Khai	Sa Kaeo	Trat	Ranong	Tak	
7. You are involved in providing public health services to migrants, both proactive and reactive services and patient referrals	15 (68.2)	10 (100.0)	4 (40.0)	9 (75.0)	11 (100.0)	10 (100.0)	59 (78.7)
8. You have teamwork, build networks and coordinate operations of foreign communities' development.	17 (77.3)	9 (90.0)	7 (70.0)	12 (100.0)	11 (100.0)	8 (90.0)	64 (85.3)
Mean	12.23	12.60	11.90	13.33	15.27	12.20	12.85
S.D.	3.50	2.17	2.23	2.15	1.01	3.46	2.86
Level	4	4	4	5	5	4	5

The aspect of promoting migrant and non-Thai national access to health services was found at Level 4 (mean 28.52). When considering level 5, the following roles were observed: the role to support the operation of public health personnel and family doctors teams was found in Nong Khai and Ranong Provinces; the role to

support consumer protection was found in Ranong Province; the role to support the operation of village health management was found in Ubon Ratchathani, Nong Khai, and Ranong Provinces and the role to support village health volunteers (VHVs) as co-workers were found at Nong Khai and Ranong Provinces (Table 2).

**Table 2.** Mean, SD, and level of MHVS role in assisting health personnel in aspects promoting access to health services, classified by province

Province	MHVs' Role														
	Family doctor team			Consumer protection			Village health management			Coworker of VHVs			Support public health operations		
	Mean	S.D.	level	Mean	S.D.	level	Mean	S.D.	level	Mean	S.D.	level	Mean	S.D.	level
Ubon	10.32	4.53	4	7.55	3.00	4	9.95	2.38	5	1.55	0.86	4	29.36	8.85	4
Nong Khai	13.30	1.25	5	7.90	2.38	4	11.30	1.25	5	1.80	0.63	5	34.30	3.43	5
Sa Kaeo	7.50	4.40	3	6.20	2.20	4	6.30	3.59	3	1.50	0.85	4	21.50	5.50	3
Trat	9.25	4.25	4	6.67	3.17	4	9.17	2.17	4	1.33	0.98	4	26.42	8.63	4
Ranong	12.73	1.35	5	9.45	0.93	5	11.09	1.38	5	1.64	0.81	5	34.91	2.74	5
Tak	9.10	3.38	4	4.30	2.75	3	9.30	1.49	4	0.70	0.95	2	23.40	5.06	4
Total	10.36	4.03	4	7.12	2.92	4	9.60	2.62	4	1.44	0.89	4	28.52	8.02	4

The origin of MHVs was different according to the context of public health problems in each area and the MHVs potential for developing curriculum, which was divided into two groups: (1) The potential development from the Ministry of Public Health's (MOPH) standard curriculum was found in Nong Khai Province, Sa Kaeo Province, and Ranong Province. And (2) the potential development derived from the specific curriculum, which was tailored for the area's context, is that the foundation is the MOPH curriculum, including the Health Educator course in Trat province, the

SRRMT course in Tak province, and the ASEAN MHVs course in Ubon Ratchathani province. The differences in origin led to the operating model and the role of MHVs being different, as follows:

**The model of DPC of MHVs along the Thai border with Myanmar, Lao PDR and Cambodia:** It was found in two types, as described below.

**Type 1 Paired working model** between MHVs from Thailand and HVs (health volunteers) from neighboring countries. The MHVs played an important role in connecting the parallel working

networks of intervillage, interhospital and intergovernment health officials. The details are detailed below.

**1.1 Paired working model between MHVs and HVs of neighboring countries**, which are labeled by different names, for instance, MHV's buddy was found at the border of Myanmar and Cambodia; Xiao (friendship) or Xiao Sukkhapap (health friendship) was found at the border of Lao PDR. In Ubon Ratchathani, MHVs were developed by MHVs buddies and trained from the curriculum of ASEAN Health Volunteers (HV) with parallel towns between Ubon Ratchathani and Savannakhet, Salavan, and Champasak Province. Xiao Sukkhapap and MHVs supported HV screening of the patients at the entry point of Chong Mek, Sirindhorn District. In Sirindhorn Hospital and SHPH; MHVs were supported by the NCD Clinic, the launch of the EPI vaccination unit, surveys of sources of HIV transmission, home visits of patients with chronic diseases, elderly people, bedridden patients, and community members with disabilities.

In the case of Ranong Province, MHVs had two forms of the buddies, for instance, firstly, Thai VHVs and MHVs on the Thai side, and secondly, MHVs on the Thai side and HVs on the Myanmar side to work together. Because of HVs from Myanmar, the details of epidemiology events in Myanmar are better known than through official communication. Thus, the MHVs play the role of DPC of disease epidemics from Myanmar's neighboring countries through the cooperation of HVs from Myanmar's side in the form of Buddy. Then, the working line was connected to Thai public health personnel. In the health service role, MHVs will work together with VHVs to screen for DM and HT and campaign about health behaviors and conduct home visits. The MHVs are responsible for preparing the target group and facilitating communication between migrant patients and public health personnel.

In the case of Nong Khai Province, MHVs were paired with Xiao volunteer models of DHF. It constituted collaboration among VHVs, MHVs and Ban Health Volunteers (BHV) between Thai and Lao PDR. The work is performed as a network of DPC for DHF. They conducted activities like bonding with Xiao, working as Xiao Arsa (a volunteer), both in Thailand and Lao PDR, and learning together about DPC. The same occurred in Klong Yai District, Trat Province, where the model of DHF surveillance was developed at the subdistrict level. MHVs received training and worked as buddies for DPC in the area. To participate in the campaign for DHF prevention, they could also receive advice about how to take antiviral drugs because they were originally working with the Rakthai Organization for the care of Cambodian PHA.

**1.2 MHVs promotion and connection for working.** MHVs were working under the public health Memorandum of Understanding (MOU) for DPC parallel to country, province, district, and village levels as found at each border, as discussed below. The border between Thai-Lao PDR was found in the MOU and parallel to Ubon Ratchathani Province with Savannakhet Province, Salavan Province and Champasak Province, Sri Chiang Mai District, Nong Khai Province with Mueang Sri Khot and Lao PDR. The public health initiatives on DPC were connected by the activities of VHVs and MHVs in Thailand and BHVs in Lao PDR in terms of improving public health performance by focusing on the behavior of Xiao volunteers and coordinating them as a DPC network via application and sharing the village model of DHF on both sides.

The border between Thailand and Myanmar, Mae Sot District, Tak Province was found to be a health dam for surveillance and DPC. They were cooperating at the village level as twin villages in 13 pairs. In case of a disease outbreak in the village, the MHVs and

VHV buddies communicated conveniently and rapidly. They worked as the Surveillance Rapid Response Migrant Team (SRRMT) to efficiently monitor and report events for DPC across border. MHVs and MHVs were trained for disease surveillance at the learning center of the non-Thai nationals. MHVs serve as a connector between government personnel and minority ethnic groups from Myanmar or Burmese to access health information, provide health education about DPC, participate in dengue fever control, manage the environment, and conduct campaign activities. For example, MHVs could offer minority Myanmar groups experiencing difficulty accessing tuberculosis (TB) screening with mobile X-ray units, an urgent policy of the district. Ten patients with TB were screened, which was important to prevent and control TB in the village. Additionally, MHVs could survey and draw a village map to control the cholera outbreaks and conduct SWOP.

The border between Thailand and Cambodia is in Aranyaprathet District, Sa Kaeo Province and was found to be the parallel of the sister hospital. It focused on health services, supporting medical equipment and tools in Cambodia, and collaboration to enhance the performance of public health personnel in four pairs of Aranyaprathet: Poipet Hospital, Khlong Hat-Samphao Lun Hospital, Khok Sung and Sawai Hospital and Ta Phraya and Thamor Purk Hospital. The MHVs played a role in surveillance, DPC and facilitated communication between the patients and healthcare workers in the hospitals.

**Type 2 working inside group specifications classified by the MHVs qualifies.** Only in Ranong Province, a model area of DPC operates with Myanmar migrant workers, together with the mechanism for dialog between Thais and Burmese under the Medicine Fund. The MHVs were classified into three groups:

conveniently working, performance development, approach to migrants, and DPC in the area. Group A comprised MHVs registered legally, who communicated well in Thai, had more opportunities for knowledge gain, and could participate in meetings outside the province. Group B consisted of MHVs who could participate in meetings and share both inside and outside the province on some occasions. Group C comprised the MHVs helping to coordinate public health work in the community. This group was using a border pass of approximately 50%. Migrants in Myanmar were living together as a community, and they attended the hospital when they developed a serious illness. Thus, Ranong Province was setting up a Thai-Myanmar primary health center, or Drop-in Center. It not only sold drugs but also managed health promotion activities, DM and HT screening, and provided disease knowledge such as DHF and TB. The MHVs played an important role in helping the public health personnel conduct activities in this center. Thus, this center contributed to the MHVs and migrant participation in the medicine fund. They could buy shares and receive dividends from the fund.

#### **The roles of MHVs covered two aspects.**

**1. Their roles regarding aspects of DPC;** in Sirindhorn District, Ubon Ratchathani Province, MHVs participated in the CD campaign, conducted home visits, provided patient care in the community, and offered health advisory services for migrants in the community. In Klong Yai District, Trat Province, MHVs served as interpreters to assist public health personnel, inform health information, inform health educators on DPC, and support migrants' access to health care units. In Mae Sot District, Tak Province, MHVs participated in surveillance and DPC along the border with Thai VHV,

such as monitoring DHF, measles, cholera, and DOTs among migrants in the community. In Ranong Province, MHVs worked together with VHV and HVs on the Myanmar side to monitor and report disease epidemics or outbreaks rapidly and control the epidemic events in a timely manner. In Sa Kaeo Province, the MHVs played a role in communication and reporting the events of disease epidemics or abnormal events that should be reported, such as rabies, DHF and TB. When abnormal events were reported from the entry point to SHPH, then the MHVs would continuously monitor the events.

**2. Their roles regarding aspects to support health service accessibility** were detailed in each area. In the case of Banmor entry point, Nong Khai Province, MHVs helped publicize and spread news to migrants coming to receive services, for instance, EPI events, help SHPH with vital signs measurement, patient care, home visits and care givers. On the other hand, MHVs served in an advisory role about self-care, exercise, family member health care, advising migrants on how to access health services and how to buy health insurance. In Klong Yai District, Trat Province, MHVs assisted in public health work, communicated between migrants and service providers and promoted migrant access to health services. In Mae Sot District, Tak Province, MHVs were interpreters between public health personnel and migrants in the health unit. In Sa Kaeo Province, MHVs could serve as knowledge providers concerning self-management with 3E2S (Eating, Exercise, Emotion, Stop Drinking, Stop Smoking), environment management and reporting CD. In Ranong Province, MHVs played a role in health care, communication in health units between migrants and health personnel, and visited migrant homes in the community.

## DISCUSSION

The paired working models between MHVs from Thailand and HVs (health volunteers) from neighboring countries were studied. Paired working models of MHVs were found in two kinds: first, individuals were paired between MHVs from the Thai side and HVs from neighboring countries, and second, parallel work was conducted under the MOU among the village, district and public health hospitals. The MHVs served a role in connecting and supporting public health work as if health were a dam. They were working with SRRMT at the village level, working parallel with twin villages from neighboring countries, and supporting health personnel who could approach the ethnic minority group, which was difficult to contact. This was consistent with the findings of the study about the management of the public health system at the border in a special economic zone in aspects of the public health system parallel with neighboring countries<sup>25</sup>. In Ranong Province, Myanmar migrants have been residing together as a community for a long time, and they have careers. MHVs worked depending on their ability in terms of the language and type of migrant: registered migrants or temporary border pass migrants. It was according to the proposed suitable area for MHVs' work, which consisted of the area where migrants resided together as a community for a long time and maintained clear employer ties<sup>12</sup>.

### ***The role of MHVs***

**(1) The role of surveillance and DPC** was taken by MHVs at the 5th level (mean = 12.85). S.D. = 2.86) and was found at 5 levels in Trat and Ranong Provinces due to MHVs originating from FHP, which has been assisting in solving public health problems with NGOs. Level 4 was found in Ubon Ratchathani, Nong Khai, Sa Kaeo, and Tak Provinces because almost all migrants in the border area were illegal. These migrants faced obstacles in

communication due to language barriers, hindering their ability to communicate effectively and they didn't know about their rights related to healthcare and treatment when they fell sick<sup>11, 26-27</sup>. Thus, the MHVs or FHP role was crucial to support migrant access to health services, and it could also prevent disease distribution in the community.

The qualitative data reflected MHVS roles as described below. At the Thai-Lao PDR border, MHVs participated in campaign activities, home visits, and health care consultations, and worked with the SRRT during disease outbreaks and CD surveillance. This border was MUO for surveillance and DPC at the transborder areas for a long time<sup>28</sup>. At the Thai-Cambodia border, MHVs served as interpreters for public health personnel, announced crucial events, reported the situation of the disease epidemic, and led migrant access to health services. At the border between Thailand and Myanmar, MHVs played a role in surveillance and DPC with VHV, for instance, surveillance of DHF and measles, identifying patients with cholera, using DOTs for migrants in the village and building up the MHVs network both on the Thai and Myanmar sides to report the disease situation on time. Thus, MHVs are important to Thai-Myanmar border health<sup>12</sup>. In the same context as Ranong and Trat Provinces, the migrant fishing community and employed<sup>22</sup> MHVs and FHP played an important role in surveillance and DPC effectively.

**(2) Role of supporting health service accessibility** for migrant or non-Thai nationals. The quantitative data showed this role at Level 4 (mean 28.52). The roles of each aspect of the family doctor team, consumer protection, health management or village health management, and working with VHV were all at Level 4 (mean = 10.36, 7.12, 9.60, and 1.44, respectively). The perception and

management of activities of all roles affected the participation of DPC along the border areas<sup>10</sup>. The qualitative data explained the MHV's roles as detailed below. MHVs support and help facilitate migrants; coordinate channels of health service with health units; assist patient screening; publicize migrant services; provide advice on buying health insurance and communicate between migrants and health personnel. These factors, according to the support for primary health care service accessibility of Myanmar migrants in Mae Sot District, Tak Province include acting as interpreters when services are provided and engaging in proactive activities such as visiting migrant homes<sup>29</sup>.

As afore mentioned, the context is different in aspects of spatial geography, the relationship between the populations on both sides and integration into the migrant community in Thailand. The results show differences in the DPC model and the role of supporting the public health operation of MHVs. For instance, working in pairs is different according to the level of people's relationship between the two sides. In the border area of Thailand and Lao PDR, MHVs have close-up relations with VHV on the Thai side. The pairing is, therefore, friends. Or "Xiao," which has a more in-depth meaning than the word "buddy." On the sides of Burma and Cambodia, there are simple pairing operations. Whereas the community integration of migrant workers in Ranong province was emphasized, the working model of MHVs was emphasized within groups that have specific MHV characteristics. The MHV role was not quite different in terms of DPC and support of public health operations, except for the activity details that followed the problem situation that was different at the border areas of the three countries.

## RECOMMENDATIONS

It should be promoted that MHVs are covered by border health, to support DPC in migrant and minority groups, which are difficult to approach, to connect the inter-public health work, both official and nonofficial, and to support migrant access to health services in border areas. In the aspect of MHVs performance, MHVs should be trained with various useful skills related to areas' contexts such as SRRMT, health educator, and ASEAN MHVs curriculum, and the MHVs' roles should fit the context of each area to gain confidence and work effectively.

## LIMITATIONS

The limitations of the study are time and budget support. It led to the limitation of this research due to the small sample size of MHVs and representatives of public health personnel. This limitation affects the completeness of some data from fieldwork.

## ACKNOWLEDGEMENT

This research would like to thank the DDC, Ministry of Public Health (MOPH), Thailand for granting the research support fund and representative of the MHVs, the public health personnel and associated people from six provinces who provided the data for this research.

## REFERENCE

- Planning Division, DDC. Guidelines for communicable disease control operations in border areas. printed at the factory Pim New Dhamma Co., Ltd. N.P.
- Immigration Office. Statistics of people entering and exiting in 2002–2013 [Internet]. [cited 2015 Mar 15]. Available from: <http://www.immigration.go.th> /hiso/picture/reportHealth/ThaiHealth2013/thai2013\_25.pdf
- Aree M. Form for proposing public policy issues for scrutinizing the agenda. Meeting. N.P.; 2012
- Health of Thai people. Migrant workers and the health service system of Thailand [Internet]. 2013 [cited 2015 Mar 15]. Available from: <http://www.hiso.or.th>
- Orathai S, Supaporn S, Wisit S, and Suwaree C. The impact of health service of the community hospital located in Thailand's border: Migrant from Burma, LAOs, and Cambodia. JAH, Volume-2, No.-9, October 2013; 40-46.
- Orathai S, Supaporn S, Suwaree C, and Wisit S. Impact of Lao, Cambodian, and Burmese migrant workers to the burden of health service of Hospitals along the border of Thailand. Budget support from the National Research Council of Thailand and the Ministry of Natural Resources and Environment. N.P.; 2013.
- Natthani M, Seung C.P., Penchan P.S., Wilasinee K, and Thammarat M. Transnational mobility and utilization of health service in northern Thailand: implication and challenges for border public health facility. Journal of Primary Care & Community Health. Volume 12; 1-7.
- Department of Health Service Support, MOPH. Opening a curiculum for foreign health volunteers, healthcare manual in 5 languages. Puean newspaper, Public Health Volunteers – Village Health Volunteers 2016; 35(4).
- Institute for Population and Social Research, Mahidol University. Thai Health 2013: Reform Thailand, Reform the power structure to increase city power. Amarin Printing and Publishing Public Company Limited; 2013.
- Methee S, Netnapa S, and Tassaporn C. Factors influencing to village health volunteers participation for disease

prevention and control at along the border at Phu Sang District, Phayao Province. JRTAN, 2017; 18(1):83-93.

11. Susanha Y. Access to health services and reproductive health care Behavior of Shan women migrant workers. THJPH, 2012; 42(3):68-82.

12. Suwaree C, Thaworn S, Patchanee T, Anuchit S, and Natthida SR. Situation of health service providing for Cambodians at Thai-Cambodian border: A case study of the work process of Foreign Health Personnel (FHP). Research for the development of Thai health insurance. Health Systems Research Institute, Ministry of Public Health, Nonthaburi; 2013.

13. Ruedee B, and Piyathida N., 2019. Integration of academic services and disease prevention among migrant workers. Health care in Mueang District, Samut Sakhon. Journal of Nursing and Health Care 37(1)W 6-11.

14. Suwaree C, Thawornsakulpanich, Patchanee Thamwanna, Anuchit Sawangchaeng, and Natthida Sukruangrong. 2013. Study of the situation of health services for Cambodians at the Thai-Cambodian border: A case study of Sa Kaeo, Chanthaburi, and Trat provinces. Research Office for the Development of Thai Health Insurance, Health Systems Research Institute, Bangkok.

15. Beuru of Nursing Office, MOPH. Manual for training courses for foreign health personnel (FHP). N.P.; 2015.

16. The Office of Policy and Strategy, MOPH. Problem solving and work development At border health, Fiscal Year 2015 [Internet]. [cited 2018 Jul 14]. Available from: <http://www.boe.moph.go.th/files/meeting/IHR2015/8.pdf>

17. DDC, MOPH. Directions, policies and goals of prevention and control of disease and health hazards operation. Documents for the workshop to increase the efficiency of strategic management for prevention and control of diseases and health hazards, DDC, fiscal year 2017; 2016 Oct 18-20; at Princepa Hotel. Lace Mahanak Bangkok: N.P.; 2017.

18. Hfocus. "Proposal for the Ministry of Public Health to include SSOs in the public health system structure to help control and prevent epidemics." [Internet]. 2017 [cited 2018 Jul 24]. Available from: <https://www.hfocus.org/content/2017/11/14822>

19. John W. Creswell, J. and David C. Research Design: Qualitative, Quantitative and Mixed Method Approach. 5<sup>th</sup> Edition: SAGE Publication; 2018.

20. Ngamjarus C. and Pattanittum P. n4Studies: application for sample size calculation in health science research. Version 2.2. App store; 2023.

21. Wayne WD. Biostatistics: A foundation of analysis in the health sciences. 6<sup>th</sup> Edition: John Wiley & Sons, Inc.; 1995.

22. Ngamjarus C. Sample size calculation for health science research. 1<sup>st</sup> Edition. Khon Kaen, Thailand: Khon Kaen University Printing House; 2021.

23. Department of Health Service Support, MOPH. Standard training course for foreign health volunteers. N.P.; 2014.

24. Best JW. Research in Education. New Jersy: Prentical-Hall Inc.; 1981.

25. Wannara C, Chucheep B, and Kirata K. The development of the border health system management model at Thailand's border, at Tak Special Economic Zone to support the ASEAN Community. Journal of Pathumthani University Academic 2018; 10(1):237-45.

26. Supaporn K, Songkhramchai L, and Suthinan S. The development of the efficiency in Operate the health insurance fund for foreign workers in Udon Thani Province. The Office of

Disease Prevention and Control 7, Khon Kaen Province 2016; 23(2):88-100.

27. Soisuda K, Ronaphum S, and Ratchaneewan K. Health problems from Working among migrant workers (Foreign workers), Samut Sakhon Province. Dis Control J, 2017; 43(3):255-69.

28. Saowanee P, Narin S, and Phitsanurak K. The results of The surveillance system development for disease prevention and control of emerging diseases along Thailand-Myanmar-Laos border, Chiang Rai Province, 2017-2018. Dis Control J, 2019; 45(1):85-96.

29. Natthaphanee B, and Adirek F. Guidelines for developing of primary health service accessibility. Of Myanmar migrant in the area of Mae Sot District, Tak Province, by World Vision Foundation of Thailand. JHUSO, 2018; 24(Special Issue):86-102.