

## ACCESSIBILITY OF HEALTH CARE SERVICE IN THASONGYANG, TAK PROVINCE, THAILAND

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### ABSTRACT

Accessibility to health care services in Thailand is generally good, but a few areas in the country are difficult to reach. The purpose of this study was to investigate the accessibility of health care services in rural and remote areas of Thailand. It was conducted in 16 remote villages within a catchment area with a primary health care post. The health care post staff interviewed 394 respondents (197 males and 197 females) using a structured questionnaire. Most respondents utilized primary health care posts (98.5%) and medical institutes. Most of the respondents were Karen, had low incomes, and were illiterate. However, they had health insurance. Most of them took more than 30 minutes to travel from home to their primary health care post (60.9%), and took more time in the rainy season than in the dry season. Moreover, it took more than 2 hours for them to travel to the nearest hospital from their residences (64.5% in the dry season and 84.5% in the rainy season). They also paid more for medical services, travelling and food on the way to the hospital. Not only primary health care posts, but also many other medical institutes provided health care services in the villages. In conclusion, based on the results of this study, primary health care posts in remote areas are necessary to ensure the residents' healthy lives. Therefore, improvement of the quality and accessibility of primary health care posts should be considered as the top priority.

Key Words: Primary health care post, Access, Rural and remote area, Thailand

### INTRODUCTION

Primary health care is essential for improving and maintaining the health of a population.<sup>1)</sup> Primary health care has the potential to approach and achieve both the Millennium Development Goals (MDGs) and the greater goal of universal access to health through acceptable, accessible, appropriate and affordable health care.<sup>2-4)</sup>

In Thailand, a lower-middle income country, primary health care is delivered by nurses and primary care workers in health promoting hospitals, each responsible for a catchment area sub-district level inhabited by 5,000 to 10,000 people.<sup>5,6)</sup> However in some remote and mountainous areas, we provide primary health care posts which are each responsible for 1 to 3 villages, each with a population of 500 to 3,000. Each primary health care post is staffed by a health care

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technician and a health care assistant. Most potential technicians are recruited from good health assistants and local district students<sup>7)</sup> with the educational minimum of a high school diploma. They are required to attend 2 years of training at public health colleges that are under the purview of the Ministry of Public Health in Thailand. The training aims to provide comprehensive care, health promotion, disease prevention, curative care and rehabilitation when there is a shortage of doctors and nurses, particularly in rural areas.<sup>5)</sup> The function of a primary health care post consists of health education, promotion of food supply and nutrition, maternal and child health care including family planning, immunization, prevention and control of local endemic diseases, appropriate treatment of common diseases and injuries, and provision of essential drugs.<sup>3)</sup>

A universal coverage scheme was implemented in April, 2002. To improve the health of all Thai people, the provision of equal access to quality care, in accordance with the health needs of the entire population, was urgently needed. The universal coverage scheme offers coverage for all Thai citizens not covered by any other public health insurance schemes. Beneficiaries can obtain and enjoy full access to their health care services, offered by designated area-based networks of providers free of charge. Universal coverage is a comprehensive package which includes health promotion, prevention of diseases, curative care, and rehabilitation services. The current extensive system has been proven capable of protecting its members financially from catastrophic situations.<sup>8)</sup>

In most parts of Thailand, health care facilities can be easily reached within 30 minutes<sup>6)</sup>, but some areas are more difficult to access.<sup>8)</sup> There have been many researchers showing that geographical accessibility of health services has a direct bearing on the utilization of those services.<sup>9-12)</sup> There is also a scarcity of health resources and inequity of health facilities, particularly in remote areas. Besides the primary health care posts and hospitals, mobile health services are available. The Malaria clinic, Thasongyang Hospital, local government subdistrict levels and private agencies dispatch medical staff to rural and remote areas, but their services are very limited. For example, services are provided during the rainy season by the Malaria clinic, especially during outbreaks of malaria, and in the dry season by the Thasongyang Hospital, local government subdistrict levels and private agencies because road conditions are very poor in rural and remote areas and usually only slightly better in the dry season. To improve the health care service, we must learn whether a given health service meets the needs of the community.<sup>3)</sup> To the best of the authors' knowledge, no research has yet been carried out on the accessibility of health care services in the rural and remote areas of Thailand. Therefore, we conducted this study especially to investigate the accessibility of primary health care posts and hospitals, in rural and remote areas of Thasongyang, Tak province.

## MATERIALS AND METHODS

This study was conducted in 16 villages within a catchment area of the primary health care post of Thasongyang District, Tak Province, from June to August 2012. The study population consisted of 394 people in the catchment area of the primary health care post, divided by the proportion of people in the catchment area of the primary health care post. The respondents were 15 years old or older and had lived in the village for more than 6 months. Data were collected by face-to-face structured interviews by sixteen primary health care post staff. In many cases, the questionnaire needed to be translated into the Karen language or some local language. The cluster sampling technique and purposive sampling method were applied. The response rate was 100%. The questionnaire was developed by research team members based on existing literature and knowledge of the health situation in the study location, and was validated for its contents.

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The collected data were double-checked and entered into SPSS program for analysis and Chi-square test was also applied. Before data collection, verbal informed consent was obtained from all the respondents after explaining the study to them in detail. This research was also approved by the Ethical Committee of Tak Health Office, Ministry of Public Health of Thailand.

## RESULTS

The socio-economic characteristics of these respondents are summarized in Table 1. Three hundred ninety-four eligible persons were interviewed with an equal number of males and females. Neither sex had many differences in terms of socio-economic characteristics. About 32.0% of the respondents were in the age group of 25–34 years, followed by 24.6% and 21.1% in the 35–44 year and 15–24 year age groups, respectively. Most of the respondents were Karen (71.3%), followed by Thai (27.9%) and Burmese (0.8%). Regarding occupation, respondents were mostly farmers (76.4%) followed by generally employed (12.7%), and others (10.9%). Regarding education, 63.5% of respondents were illiterate, 20.3% had attended primary school, lower secondary school (6.3%), higher secondary school (6.1%), some had vocational training (2.0%), or bachelor's degree or higher (1.8%). As to their income, the majority of respondents (74.6%) earned less than 100 USD/month. In terms of health insurance, most respondents had the universal coverage scheme (88.3%), but some (8.4%) had no health insurance. Most of the respondents (98.5%) used to visit and utilize primary health care posts and health facilities.

Table 2 shows that the travel time from the respondents' residence to the primary health care post showed statistically significant differences between the rainy and the dry seasons; 39.1% of respondents took 0.5 hours or less to travel during the rainy season compared to the dry season (53.6%), and took more than 2 hours in the rainy (13.2%) and dry seasons (6.6%). The most common mode of travel to the primary health care post was by foot (76.9%) followed by motorcycle (18%), car (4.6%) and other (0.5%).

Health care posts provided the following health care services: medical treatment for outpatient services (94.9%), general health examination (82.2%), immunization (77.2%), health education (74.6%), mobile medical treatment for outpatient services (69.8%) and participation in a primary health care post committee (12.7%). More than females, males used primary health care posts for dengue prevention and control (65.5%), malaria prevention and control (63.5%), diarrhea prevention and control (65.5%), to obtain a recommendation to see a doctor (45.2%), request health data and information (22.8%) and participate in a health care post committee (16.7%). Females, on the other hand tended to use a primary health care post for medical treatment (97.0%), immunization (82.2%), health education (76.1%), mobile services for outpatients (72.1%), diabetic and hypertension screening (70.1%), family planning (84.3%), cervical and breast cancer screening (56.3%), antenatal care clinics (62.9%), school health promotion (38.1%) and rehabilitation services for patient at home (34.0%).

The expense of utilizing health care services at primary health care posts for the last time within 2 years is shown in Table 3. All health care services provided at primary health care posts are free of charge. Most respondents did not pay for the food expense of the patient's relatives or pursuers (83.2%), food expense of the patient (80.5%), travel expense of relatives or pursuers (75.9%) or for the travel expense of the patient (66.3%).

Not only primary health care posts, but also many medical institutes provide health services in the villages, although in a very limited way. There were few differences between males and females utilizing these agencies; however, males utilized disease prevention and control (48.2%) and sanitary improvement and waste disposal (12.7%) more than females (41.1%) and (8.1%), re-

**Table 1** Socio-economic characteristics of respondents

Characteristics	Male (n=197)		Female (n=197)		Total (n=394)	
	n	%	n	%	n	%
<b>Age</b>						
15–24	29	14.7	54	27.4	83	21.1
25–34	67	34.0	59	29.9	126	32.0
35–44	57	28.9	40	20.3	97	24.6
45–54	33	16.8	33	16.8	66	16.8
55 or older	11	5.6	11	5.6	22	5.6
<b>Race</b>						
Thai	62	31.5	48	24.4	110	27.9
Karen	133	67.5	148	75.1	281	71.3
Burmese	2	1.0	1	0.5	3	0.8
<b>Occupation</b>						
Public servant/state employee	1	0.5	0	0	1	0.3
Company employee	4	2.0	2	1.0	6	1.5
Private business	8	4.1	7	3.6	15	3.8
Farmer	156	79.2	145	73.6	301	76.4
Teacher/student	10	5.1	6	3.0	16	4.1
General employed	17	8.6	33	16.8	50	12.7
Others	1	0.5	4	2.0	5	1.3
<b>Education</b>						
Illiterate	124	62.9	126	64.0	250	63.5
Primary school	44	22.3	36	18.3	80	20.3
Lower secondary	10	5.1	15	7.6	25	6.3
Higher secondary	11	5.6	13	6.6	24	6.1
Vocational training	3	1.5	5	2.5	8	2.0
Bachelor's degree or higher	5	2.5	2	1.0	7	1.8
<b>Income</b>						
Less than 100 USD/month	137	69.5	157	79.7	294	74.6
100–330 USD/month	53	27.0	36	18.3	89	22.6
More than 330 USD/month	7	3.5	4	2.0	11	2.8
<b>Health insurance</b>						
Universal coverage	173	87.8	175	88.8	348	88.3
Civil servant medical benefit	1	0.5	4	2.0	5	1.3
Social security	1	0.5	0	0.0	1	0.3
Migrant health security	5	2.5	2	1.0	7	1.8
None	17	8.6	16	8.1	33	8.4

**Table 2** Comparison of time taken to reach nearest primary health care post in rainy and dry season

Time <sup>a</sup>	0.5 hr or less		0.51–1.0 hr		1.01–2.0 hrs		More than 2.0 hrs		Total	
	n	%	n	%	n	%	n	%	n	%
Rainy season	154	39.1	102	25.9	86	21.8	52	13.2	394	100.0
Dry season	211	53.6	100	25.4	57	14.5	26	6.6	394	100.0

a: Chi-square test,  $p < 0.01$

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**Table 3** Expenses for utilizing health care services at primary health care post

Characteristics	No charge		0.1–1.6 USD <sup>b</sup>		1.7–3.2 USD		3.3 USD or more		Total	
	n	%	n	%	n	%	n	%	n	%
Travel expenses of patient	263	66.8	30	7.6	46	11.7	55	14.0	394	100.0
Food expenses of patient	317	80.5	16	4.1	30	7.6	31	7.9	394	100.0
Travel expenses of relatives/pursuers	299	75.9	19	4.8	30	7.6	31	7.9	394	100.0
Food expenses of relatives/pursuers	328	83.2	14	3.6	20	5.1	31	7.9	394	100.0

a: Medical services provided at primary health care post are free of charge.

b: 1 USD = 30.61 Thai baht (THB) rate on October 1<sup>st</sup>, 2012

**Table 4** Comparison of time taken to reach nearest hospital in rainy and dry season

Time <sup>a</sup>	0.5 hr or less		0.51–1.0 hr		1.01–2.0 hrs		2.01–3.0 hrs		3.01–4.0 hrs		More than 4.0 hrs		Total	
	n	%	n	%	n	%	n	%	n	%	n	%	n	%
Rainy season	3	0.8	4	1.0	54	13.7	94	23.9	120	30.5	119	30.2	394	100.0
Dry season	4	1.0	42	10.7	94	23.9	111	28.2	96	24.4	47	11.9	394	100.0

a: Chi-square test,  $p < 0.01$

spectively. The Malaria clinic provided the most health services in the villages (31.5%), followed by Thasongyang Hospital (29.2%), local government subdistrict levels (27.0%), private agencies (19.5%), and the Provincial Administration Organization (0.8%). The most common health activities that these agencies provided were medical treatment for outpatient services (44.9%), disease control and prevention (44.7%), health education (41.9%), health promotion (antenatal care, family planning, etc.) (22.8%), elderly health care (19.3%), health care for the disabled (15.0%), oral and dental care (13.7%), sanitary improvement and waste disposal (10.4%), eye check up and providing glasses (6.1%), drug addiction treatment (6.1%), clean water supply (4.6%) and other (0.3%).

The travel time from the respondents' residence to the nearest hospital between the rainy and dry seasons shows statistically significant differences. Table 4 indicates that the respondents travelled to the hospital in less than 1 hour (1.8%) in the rainy season and (11.7%) dry season. They also needed more than 4 hours (30.2%) to travel in the rainy season compared to (11.9%) the dry season. The most common means by which patients went to the hospital was on foot followed by car (31.5%), only by car (27.7%), motorcycle (26.9%), on foot followed by motorcycle (9.9%), by foot (3.6%) and by some other means (0.5%).

The expenses for health care at the hospital for the last time within 2 years are shown in

**Table 5** Expenses for utilizing health care services at hospital

Payment	No charge		0.1–3.2 USD <sup>a</sup>		3.3–16.3 USD		16.4 USD or more		Total	
	n	%	n	%	n	%	n	%	n	%
Medical service charge	340	86.3	37	9.4	16	4.1	1	0.3	394	100.0
Travel expenses of patient	15	3.8	82	20.8	244	61.9	53	13.5	394	100.0
Food expenses of patient	41	10.4	212	50.8	138	35.0	3	0.8	394	100.0
Travel expenses of relatives/pursuers	105	26.6	92	23.4	164	41.6	33	8.4	394	100.0
Food expenses of relatives/pursuers	114	28.9	175	44.4	99	25.2	6	1.5	394	100.0

a: 1 USD = 30.61 Thai baht (THB) rate on October 1<sup>st</sup>, 2012

Table 5. Most respondents did not pay for medical services (86.3%), food expenses of relatives/pursuers (28.9%), travel expenses of relatives/pursuers (26.6%), food expenses of patient (10.4%) and travel for patients (3.8%).

## DISCUSSION

Primary health care posts have been established to provide primary health care in remote and rural areas in Thailand.<sup>6)</sup> Not only primary health care posts and hospitals but also the Malaria clinic, Thasongyang Hospital, local government subdistrict levels and private agencies provide health care in the villages with a mobile health service (although in a very limited way).

In this study we found that most respondents utilized primary health care posts most often for medical treatment, general health examination, immunization and health education. We consider that this is because health care posts are inexpensive and are located much closer to the respondents' residence. We found that no respondents at primary health care posts paid for health care services 394 (100%); most of them did not pay for the travel expenses of the patients, 263 (66.3%), the travel expenses for relatives/pursuers, 299 (75.9%), the patient's food, 317 (80.5%) and the relatives/pursuers' food, 328 (83.2%) for utilizing health care services. On the other hand, 54 (13.7%) of respondents in the hospital needed to pay some medical service charge. In addition, most respondents 244 (61.9%) had to pay 3.3–16.3 USD for the patient's travel expenses, 164 (41.6%) had to pay 3.3–16.3 USD travel expenses of relatives/pursuers, 212 (50.8%) had to pay 0.1–3.2 USD for the patient's food expense, with 175 (44.4%) had to pay 0.1–3.2 USD for relatives/pursuers' food at the hospital. Based on the above comparison, primary health care posts are much more available to about half the people in rural and remote areas from the viewpoint of expense, going to the post took more than 30 minutes in the dry season and 60 minutes in the rainy season. This study confirmed that in the rainy season, respondents took much more time travelling to their primary health care posts compared to the dry season.

In addition, the respondents took much more time and paid more to reach the nearest hospital than the primary health care post. Our study also revealed that in the rainy season, respondents took more time to go to the nearest hospital from their residence compared to the dry season.

Although the present study clearly demonstrated new findings regarding the current accessibility of health care in rural and remote areas, there was a limitation in this study's design i.e., most of the people were illiterate and could not understand Thai. Therefore, the questionnaire needed to be translated, and as a result the meaning was more or less changed.

This investigation showed that accessibility to health care services at primary health care posts in rural and remote areas of Thailand was not good. The impact of distance and transportation,<sup>1,9-10,12-14)</sup> especially in the rainy season, caused socio-economic disadvantages from the viewpoint of accessibility in rural and remote areas.<sup>15-17)</sup> In addition, even though lower income groups are disproportionately affected by the financial burden of health care cost,<sup>13)</sup> indirect cost of health care utilization was substantially high in many cases, making for a huge burden for people.<sup>16)</sup> We consider that most Thai people have universal coverage health insurance so that they can have access to the qualified health care services available to people in other parts of Thailand.<sup>18)</sup> The findings from this article suggest that accessibility to primary health care posts still needs to be improved in the remote areas of Thailand. As primary health care posts play an important role in keeping residents healthy, this paper can make a contribution toward decision-making in the future. For this reason, improving the quality and capacity of primary health care post is extremely important. We consider that the National Health Security Office guideline for approving Primary Health Care Units which includes structure, health staff, facilities, quality of services, information system and community participation,<sup>19)</sup> should be utilized more effectively. To achieve these objectives, associated agencies such as the regional National Health Security Office, Tak Public Health Office, Thasongyang Health committee, and local government and community must work together more closely.<sup>20)</sup>

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