

## SITUATION OF INEQUALITY IN HEALTH UTILIZATION AMONG THAI ELDERLY IN 2020

Sila Tonboot<sup>1\*</sup> and Bhagaporn Wattanadumrong<sup>2</sup>

<sup>1\*, 2</sup> Faculty of Business, Economics and Communications, Naresuan University  
Phitsanulok, Thailand.

E-mail: pugsugus@gmail.com<sup>1\*</sup>

### **Abstract**

Thailand is facing a gap in access to health services, especially among the elderly. In this article, we aimed to explore the situation of the elderly in Thailand, the public transport system as one of the factors that create a channel for access, and distribution of public health resources to the needs of the elderly. We found that the elderly population mostly concentrated in the northern region. The high proportion of the elderly compared with the gross provincial product size is in the medium sized GPPs provinces such as Lamphun, Singburi, Samut Songkhram, Ang Thong, Chainat, Nakhon Sawan, Lam Bang Phrae, Nan, Sukhothai, and Uttaradit. While the province with the highest elderly rate per rural bus is in the North and Northeast region namely Phrae (1016 elderlies per vehicle), Chaiyaphum (923 elderlies per vehicle), Amnat Charoen (920 elderlies per vehicle), Si Sa Ket (887 elderlies per vehicle) and Buriram (878 elderlies per vehicle) respectively. When we compared the proportion of the elderly population in each province with the number of doctors and the Elderly Project funding per capita, It was found that resource management was not consistent with the number of elderlies in each age group. This underscores the existence of the gap in access to healthcare for the elderly.

**KEYWORDS:** 1) HEALTH INEQUITY 2) HEALTH UTILIZATION 3) ELDERLY  
4) HEALTH ACCESS

## **Introduction**

Thailand is facing an inequality problem in accessing health services among the elderly (Osornprasop, 2016). Some groups of elderly people live in remote areas, some are poor, and some are facing the problem of lack of care (Anderson, 1973; Cooper, Cooper, McGinley, Fan, & Rosenthal, 2012; Field &

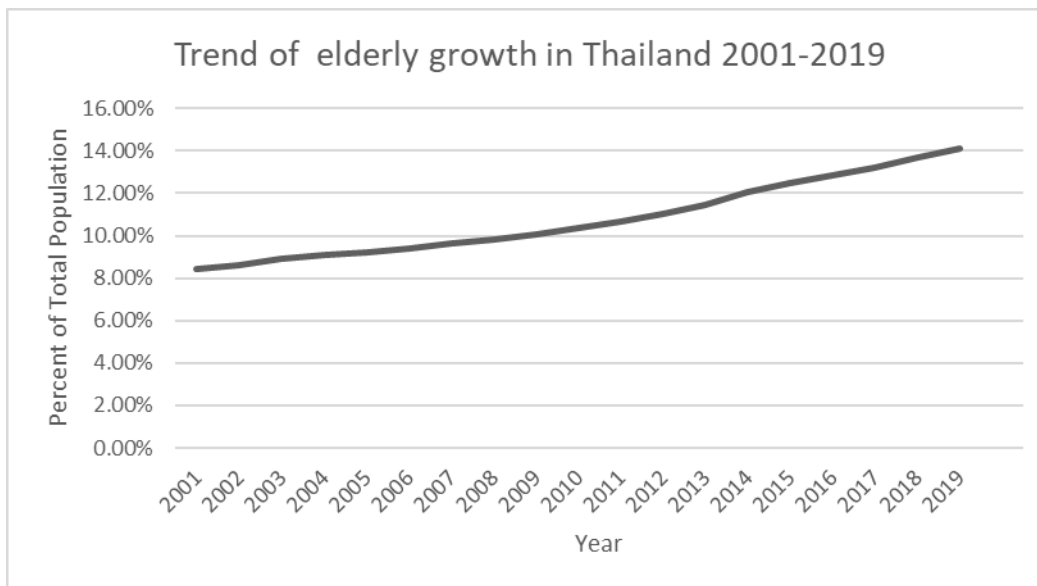
Briggs, 2001; Joseph & Phillips, 1984; Lopez-Cevallos & Chi, 2010; Michael, 1993; Oladipo, 2014; Zyaambo, Siziya, & Fylkesnes, 2012). These problems reflected the issue of accessibility. However, that is only a situation that occurs on the service side, since there are still issues of the distribution of health resources (Andersen, 1995; Michael, 1993; Sun & Luo, 2017).

In this article, we explore the situation of the elderly in Thailand, which explains the population characteristics of the elderly. The current problematic situation of access to health services and the causes of problems urge inequality in access to health services among the elderly population. It also included the information of transportation systems of different provincial areas which affect access to health services of the elderly. The social transition that causes some forms of service to be disappeared from society such as the local public bus cooperatives, causing older people who are not able to keep up with the change being left behind.

Moreover, we also reviewed the health service system as a destination for elderly to reach a well-being state. Over the years, Thailand has been committed to improving the right to have universal health coverage, enabling all Thai people to have access to health services equally. But the cost of health services is not just only an expense incurred to elderly households. There are also travel expenses, accommodation expenses in using the services. Having a health system service, but difficult to reach is painful. To compile lessons learnt from aboard and experience transport solutions of the practical policy implementation, the literatures of aboard practices are also included.

## **Elderly situation in Thailand**

The situation of the elderly population in Thailand is increasing steadily. The proportion of the elderly to the population of Thailand has increased every year. That means the fiscal burden of health expenditures increases as well. As of 2001, the population is only 8.43% elderly, while in 2019 there are 14.13% of the elderly. In two decades, the aging population has almost doubled (Department- of Provincial- Administration, 2020; National- Statistical- Office, 2020).



**Figure 1:** Shows the increase in the proportion of the elderly population in Thailand 2001-2019. Source: National Statistical Office of Thailand (2020)

In 2020, the elderly in Thailand are 11,136,059 people or 16.73% of the entire population (National-Statistical-Office, 2020). The five provinces with the highest population of the elderly are Bangkok, Nakhon Ratchasima, Chiang Mai, Khon Kaen, Ubon Ratchathani, which is considered as a large economy province. While the provinces with the highest proportion of the elderly per population were Sing Buri, Lampang, Lamphun, Phrae, and Samut Songkhram, respectively.

In Thailand, Seniors are people aged 60 and over according to the definition of the Elderly Act 2003 of Thailand (Department-of-Older-Persons, 2003). Elderly people are exposed to both physical and psychological vulnerabilities which are at risk of developing a range of diseases (Amaducci et al., 1997; Sinnige et al., 2013; Tran et al., 1990; Van Heuvelen, Kempen, Ormel, & Rispen, 1998; Vellas, Albarede, & Garry, 1992). For this reason, the elderly is more demanding for primary health care than any other age group (Oliver, Foot, & Humphries, 2014; Vrhovec & Tajnikar, 2016). However, primary health needs vary for different age groups.

The aging group can therefore be divided into several subgroups, for example, Chronological base (Kowal & Dowd, 2001). It is a time-based division divided into ranges 60-69 as young old, 70-79 as middle old, and 80-89 as very old (Forman, Berman, McCabe, Baim, & Wei, 1992). While some definitions have different age ranges starting from 65-74 as early elderly and over 75 as late elderly (Orimo et al., 2006; Zizza, Ellison, & Wernette, 2009).

This subset, although not consistent with the health status of the elderly, can make it possible to categorize the burden of primary care. As the age grows, the elderly is in a highly dependent state. As above, factors affecting the use of health services of the elderly are physical problems (Cheng, Goodin, Pahor, Manini, & Brown, 2020; Linden, Horgas, Gilberg, & Steinhagen-Thiessen, 1997; Powers & Oltmanns, 2012), social exclusion (Nayar, 2007; Preston & Rajé, 2007; Santana, 2002), socioeconomic problems (Blackwell, Martinez, Gentleman, Sanmartin, & Berthelot, 2009; Dixon, Le Grand, Henderson, Murray, & Poteliakhoff, 2007; Mutchler & Burr, 1991; van der Meer, van den Bos, & Mackenbach, 1996), and poor transport system (Al-Taiar, Clark, Longenecker, & Whitty, 2010; Arcury, Preisser, Gesler, & Powers, 2005). If we divided

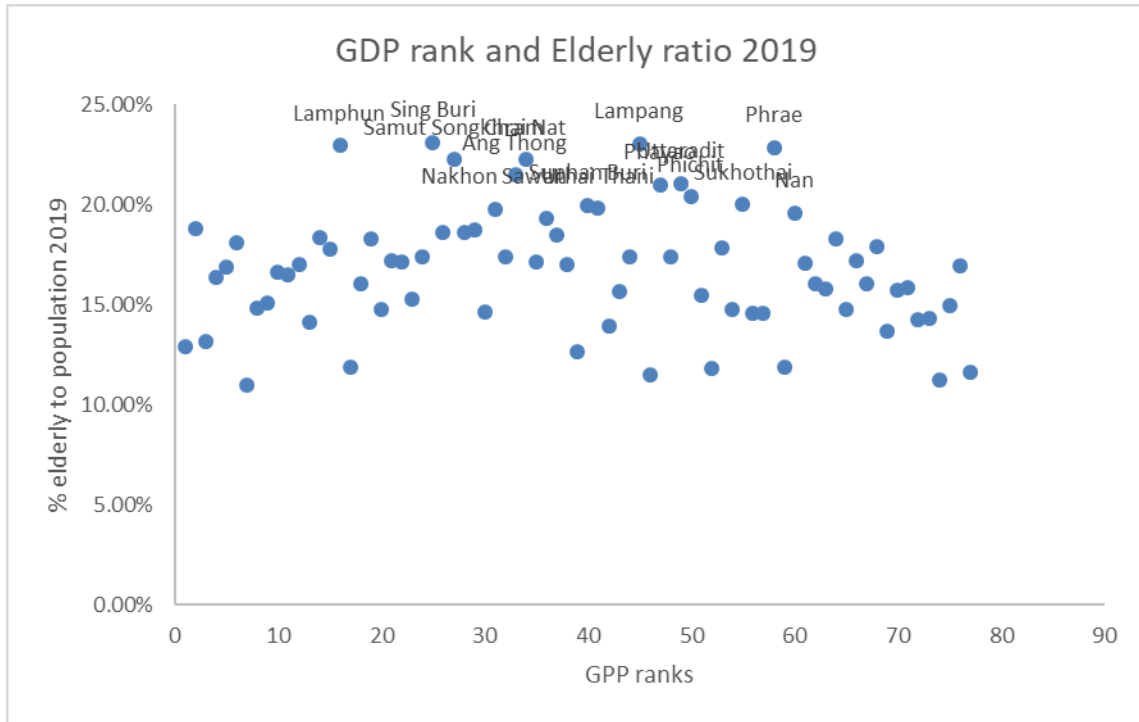
the elderly into 3 subgroups: 60-69,70-79, and more than 80, it would be possible to know the primary health needs of the elderly in Thailand by area of each province. According to 2020 data, the majority of the elderly are roughly in their 60s, about 50 percent, 70 years old, 30 percent, and 20 percent over 80, respectively.

**Table 1** displays the provinces with the most elderly in the ages 60-69 and over 80 in 2020.

<b>Rank</b>	<b>Provinces</b>	<b>60-69 (%)</b>	<b>Provinces</b>	<b>&gt;80 (%)</b>
1	Phayao	63.77%	Pattani	19.97%
2	Chiang Rai	63.42%	Nakhon Si Thammarat	19.61%
3	Chiang Mai	62.13%	Surat Thani	18.94%
4	Lamphun	61.84%	Phatthalung	18.83%
5	Nan	61.08%	Yala	18.83%
6	Nong Bua Lamphu	61.02%	Chumphon	18.80%
7	Sakon Nakhon	60.76%	Trang	18.10%
8	Pathum Thani	60.64%	Samut Songkhram	18.05%
9	Phrae	60.50%	Ang Thong	17.57%
10	Lampang	60.37%	Narathiwat	17.49%

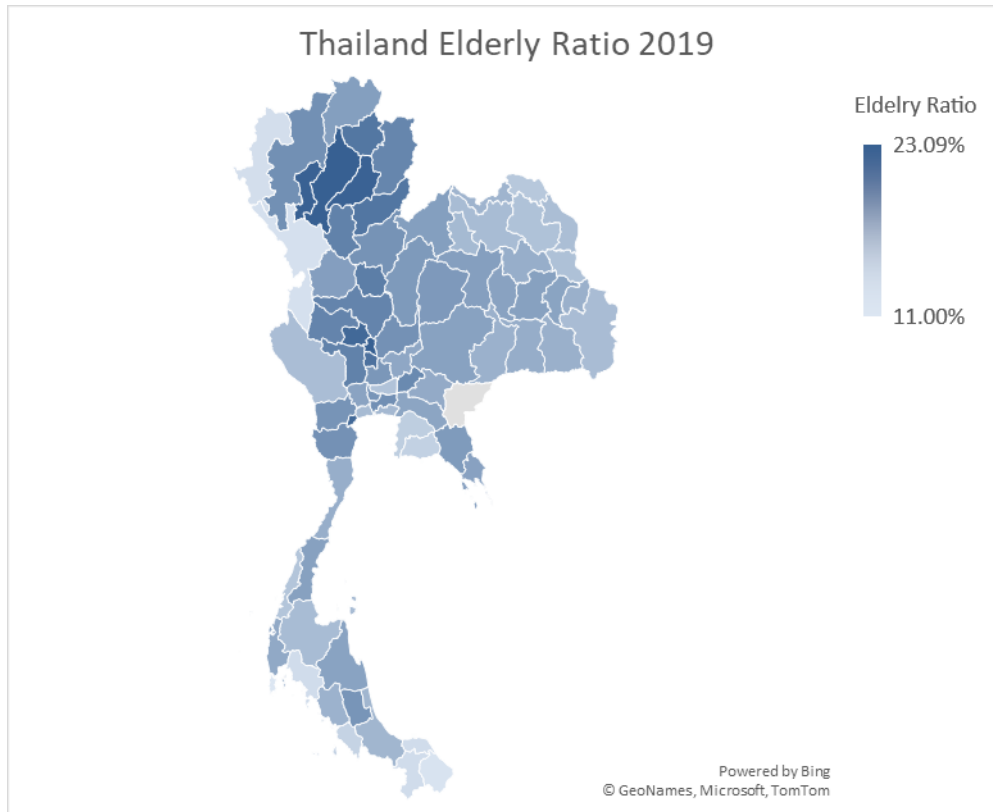
Source: National Statistical Office of Thailand (2020)

When the elderly get older, the older age has a higher dependency index than other age ranges(Liu, Unick, Galik, & Resnick, 2015; Sinoff & Ore, 1997). When considering an area with a large number of older people, the proportion older than 80 years represents a greater workload for healthcare workers. The data in the table shows some interesting characteristics. The elderly in the 60-69 years are more abundant in the North, while the South has a higher proportion of older than 80 years than other regions. This feature of the elderly data can be used to prioritize policies related to the elderly, such as which region is the first priority to focus on long-term care and access to primary health services.



**Figure 2:** Demonstrated the concentration of elderly proportion relative to GPP rankings in 2019. Source: National Statistical Office of Thailand and Office of the National Economic and Social Development Council.

In Figure 2, the concentration of the elderly is ranked relative to the provincial gross product (GPP) rank, with the 1<sup>st</sup> ranked province is the largest GPP, and the ranked 77<sup>th</sup> is the smallest GPP. In the picture, it can be clearly seen that the provinces with the highest proportion of the elderly are the medium sized GPP provinces, while the small and large provinces have similar proportion of the elderly. It explains that the burden of care for the elderly is more concentrated in rural areas than in urban areas.



**Figure 2:** Demonstrated the concentration of elderly proportion by province 2019.  
 Source: National Statistical Office of Thailand and Office.

In terms of the region, the elderly is much more concentrated in the north, while the central region is another region with much older people compared to the population proportion. From the aforementioned pictures and statistics, it can be seen that the North has completely entered the aged society. With a geographic perspective, it can lead to policy management in line with health resources.

### **Transport System in social transition**

Although Thailand has implemented a universal health coverage policy that facilitates access to all levels of health services for the elderly. Nevertheless, access to services does not just come from having rights, but also having the ability to go to health units. In 2019, the Thai government gave a credit of 1000 baht to people aged 65 years and over as travel expenses for medical examination (Sanooknews, 2018). The said budget is given once per person and is not an annual government expenditure. It is worth asking if those sums of money are actually used by the elderly to pay for their trips to check-ups or they use it in daily consumption instead. Can the elderly have access to public transport to go to the hospital? Can the credit on the state benefit card be used for rural buses? Or if it was cash, would he really use it for health expenses? In this point, we do not aim to answer those questions, but rather whether our public transport systems are prepared for this. We can learn from the provincial public bus registration information in Thailand as follows.

**Table 2:** Number of Vehicle Registered in Thailand as of 31 December 2019

(Type of Vehicle)	Central	Eastern	North Eastern	Northern	Western	Southern
Urban Taxi	-	722	1,302	805	-	1,137
Fixed Route Taxi	-	-	-	-	-	518
Motor-tricycle Taxi (Tuk Tuk)	3,705	2,497	1,663	1,709	761	178
Public Motorcycle	42,419	15,893	4,302	4,157	13,006	8,771
Fixed Route Bus <sup>1</sup>	6,478	6,307	15,692	8,123	4,736	11,251
Section 1	689	1,260	1,897	1,150	485	2,189
Section 4	4,347	3,233	7,729	5,003	2,606	5,702
Non-Fixed Route Bus	9,403	9,237	6,429	9,185	3,678	19,599
Small Rural Bus	20	9	233	135	28	212

Source: Department of Land Transport (2020)

The above table demonstrates two forms of public transport: urban and rural public transport. In urban areas, Urban Taxi, Fixed Route Taxi, Tuk-Tuk, Public Motorcycle, and Fixed Route Bus can be found, while Non-Fixed Route Bus and Small Rural Bus are available in rural areas. As social transition creates problems that leave the elderly behind, public transport is rarely available in rural areas. The people prefer having their own cars in rural areas, causing public bus cooperatives in rural areas to cease its business. That is why there is a shortage of public transport in rural areas. In particular, the elderly who have to go to district hospitals do not have travel options. Not to mention the patient in referral system to the tertiary care, especially patient with mobility issues, they will face high traveling cost and medical bankruptcy.

Wordbank reported that “the lack of caretakers and the lack of support for non-medical costs such as transportation to health facilities, however, is making access difficult. This is a particular plight for the elderly poor in Thailand, especially those in the oldest age group who are over 80 years old and living in rural area. The lack of public and affordable transportation is the most important barrier to accessing health services among older people in rural areas, especially those who do not live near major highways and roads on which public buses operate.”(Osornprasop, 2016).

<sup>1</sup> Fixed route bus

Section 1: public bus operated in municipal area

Section 4: public bus operated between districts to cities or crossing provinces

**Table 2:** Elderly ratio, GPP and elderly per bus ratio comparison by province 2019

Province	Ratio pop	Ratio rank	Rank GPP	Elder/bus
Phrae	22.84%	4	58	1061.89
Chaiyaphum	17.87%	26	68	923.80
Amnat Charoen	15.82%	48	71	920.95
Sisaket	15.79%	49	63	887.81
Buriram	15.74%	50	70	878.34
Udon Thani	14.77%	57	54	845.82
Kalasin	16.02%	47	62	795.78
Lampang	23.03%	2	45	783.54
Roi Et	17.17%	34	66	772.87
Ubon Ratchathani	14.73%	59	65	741.63

Table 2 shows the ranking of provinces with the proportion of elderly people per one public bus in comparison with the ratio of the elderly and the rank of gross provincial product size in 2019. It can be seen that the provinces with the highest number of older people per rural buses were those with the lowest GPP. Phrae and Lampang provinces with the fourth and second highest proportion of the elderly, respectively, have a shortage of buses in rural areas.

#### Health Resources availabilities

One of the factors leading to the inequality of access to health services among the elderly is the distribution of healthcare workers. Today, the number of doctors per population ratio of Thailand has greatly improved as we look back decades ago. However, nowadays doctors are concentrated in large cities, while some areas have a high ratio of population per physician.

**Table 3** displays the number of lowest and highest doctor per elderly ratio in 2019.

Lowest population/doctor provinces			Highest population/doctor provinces		
Province	Pop/doc	Elders/doc	Province	Pop/doc	Elders/doc
Bangkok	1224.34	110.10	Nong Bua Lamphu	9944.02	708.93
Phuket	1868.84	98.42	Bueng Kan	9526.74	622.29
Phitsanulok	2178.12	192.13	Nakhon Phanom	8261.91	578.26
Samut Sakhon	2288.97	162.50	Yasothon	7587.73	617.14
Khon Kaen	2304.91	191.22	Kalasin	7464.74	573.28
Nakhon Nayok	2332.67	217.30	Phetchabun	7449.74	635.50
Songkhla	2436.44	179.35	Sisaket	7402.07	561.07
Chonburi	2486.55	157.57	Amnat Charoen	7351.86	555.75
Chiang Mai	2589.93	232.63	Phatthalung	7343.27	647.97
Pathum Thani	2847.43	191.60	Kamphaeng Phet	7278.07	606.58

Data from the Statistical Office in 2018 found that the low population per doctor ratio was concentrated in the top 10 provinces: Bangkok, Phuket, Phitsanulok, Samut Sakhon, Khon Kaen, Nakhon Nayok, Songkhla, Chonburi, Chiang Mai and Pathum Thani. The population-to-doctor ratio is lower than 2800 people per doctor in the province. While the provinces with high population per doctor spread in the Northeast with a population ratio of more than 7000



people per doctor. The disparity of doctors to population is similar to that of doctors to elderly population, as shown in the table above.

Over the years, Thailand has awakened the advent of an aging society. The government has invested and promoted policies on the elderly, including Tambon Health Fund, Long-Term Elderly Care System, and Family Physician Policy. The policy implementation covers all provinces of Thailand with budget distribution through integration between agencies, namely National Health Security Office, Subdistrict Administrative Organization, Tambon Health Promoting Hospital, and a team of doctors and public health personnel in each area. If we look at the provincial total budgets invested in the elderly policy, we can see the direction of Thailand's elderly policy as well, as shown in the following table.

**Table 4:** Display the funding per elderly in total project by province in 2019.

Provinces	Total Budget	Participants	Per head	Total Elderly	Elderly cover
<b>Phitsanulok</b>	12,438,676	118,639	104.84	159,810	74.2%
<b>Nakhon Phanom</b>	4,603,870	70,060	65.71	104,903	66.8%
<b>Mae Hong Son</b>	2,431,852	19,072	127.51	33,067	57.7%
<b>Lopburi</b>	13,145,566	74,671	176.05	140,685	53.1%
<b>Nong Khai</b>	6,733,673	39,583	170.12	80,634	49.1%
<b>Chai Nat</b>	5,709,265	35,101	162.65	72,628	48.3%
<b>Surat Thani</b>	19,740,462	74,629	264.51	157,480	47.4%
<b>Nakhon Nayok</b>	5,836,417	23,426	249.14	50,301	46.6%
<b>Kamphaeng Phet</b>	9,573,175	57,582	166.25	126,366	45.6%
<b>Lamphun</b>	6,202,673	42,001	147.68	92,945	45.2%
<b>Chiang Mai</b>	23,671,134	146,543	161.53	333,692	43.9%

Source: National health security office (2020)

Data from the table are based on the expenditure of programs related to the elderly per capita from the National Health Security Office. The table shows the top ten coverage of the project, while the data clearly show that some project areas covered 70% of the elderly. If we use this information in conjunction with the number of the elderly, we will find that our budget is properly managed.

### Recent challenges and transport system in health

From information on the situation of the Thai elderly and health resources, there are gaps that lead to inequality in accessing health services of the elderly. Based on information on medical resources and policy directions on the elderly, it is clear that Thailand does not have a regional policy in place. The concentration of doctors in large cities has not been resolved, in some areas there is still a high population-to-doctor ratio. Provinces with the proportion of the elderly population over 80 years compared with the elderly budget per capita can clearly see the direction of the policy on the elderly in Thailand.

**Table 5:** The comparison of elderly ratio and doctor per elderly population and population covered in the elderly funding project.

Highest % elderly > 80s		Highest Elderly/Doctor		Highest Project Covered	
Provinces	age>80(%)	Provinces	Elderly / doctor	Provinces	% elderly covered
<b>Pattani</b>	19.97%	Nong Bua Lamphu	708.93	Phitsanulok	74.24%
<b>Nakhon Si Thammarat</b>	19.61%	Phatthalung**	647.97	Nakhon Phanom***	66.79%
<b>Surat Thani*</b>	18.94%	Phetchabun	635.50	Mae Hong Son	57.68%
<b>Phatthalung**</b>	18.83%	Bueng Kan	622.29	Lopburi	53.08%
<b>Yala</b>	18.83%	Chaiyaphum	621.54	Nong Khai	49.09%
<b>Chumphon</b>	18.80%	Yasothon	617.14	Chai Nat	48.33%
<b>Trang</b>	18.10%	Kamphaeng Phet***	606.58	Surat Thani*	47.39%
<b>Samut Songkhram**</b>	18.05%	Samut Songkhram**	586.63	Nakhon Nayok	46.57%
<b>Ang Thong</b>	17.57%	Nakhon Phanom***	578.26	Kamphaeng Phet***	45.57%
<b>Narathiwat</b>	17.49%	Sukhothai	577.39	Lamphun	45.19%

**Remarks:**

\* The proportion of the elderly over 80 years is high and the aging program covers the majority of the population.

\*\* The proportion of elderly over 80 years is high, but a shortage of doctors.

\*\*\* The Elderly Scheme covers the majority of the population, but the proportion of elderly to doctors is high.

The table above implies that the implementation of the aging policy is lacking in a clear direction. Only Surat Thani, Kamphaeng Phet and Nakhon Phanom provinces have implemented the elderly policy in the right direction. While Samut Songkhram and Phatthalung show a high proportion of the elderly over 80 years, there is also a high elderly population per doctor. In addition, the problem of the proportion of the elderly in the next 20 years must be dealt with in a systematic manner.

In the next 20 years, the northern region will have the highest proportion of elderly 80 years, as the North region currently accounts for more than 60% of the total elderly population. The 10 provinces with the highest proportion of elderly age range 60-69 in the country are: Phayao, Chiang Rai, Chiang Mai, Lamphun, Nan, Nong Bua Lamphu, Sakon Nakhon, Pathum Thani, Phrae, Lampang, respectively.

While the proportion of doctors to population in the province was higher than 4,000 per doctor. In particular, Nong Bua Lamphu has the proportion of doctors per population 9,000 people per 1 doctor and Sakon Nakhon has a population of 7,000 people per doctor. Without good planning, the cost of elderly care and the inequality in access to health services will also increase compared to other provinces.

## **Transport to health units in aboard**

The problem of inequality in access to health services of the elderly has many elements. Factors affecting access can be framed as follows: Acceptability, Affordability, Approachability, and Availability (Doetsch, Pilot, Santana, & Krafft, 2017; Levesque, Harris, & Russell, 2013). Improving access to healthcare for the elderly can be done in several ways, depending on the nature of the problem, such as: improve health insurance coverage, case management model of care, outreach service issues, cultural competency and communication, and improve transportation (Horton & Johnson, 2010).

In this article, we will discuss public transport, which are not very developed in Thailand, available in developed countries. In Thailand there are examples of promoting access to health services. Mobile health units in remote areas such as Tak Province is an interesting case study (Swaddiwudhipong et al., 1999). Buses for Health Project of Khun Han Hospital Sisaket Province is another project that should be expanded as a policy (hfocus, 2016). But these projects are limited to specific areas and are not being expanded into national policy.

In Thailand, we are so focused solely on having collateral rights that we forget about accessibility. As a result of the use of mobile units and health buses, it can be developed into policies.

In Australia, the IPTAAS is a program to support patients facing travel and accommodation challenges (O'Callaghan, McAllister, & Wilson, 2005). IPTAAS Project covered Australian nationals who hold Medicare cards, referred by a recognized, accredited medical practitioner for specialist treatment, claiming all available benefits through private health insurance, needing to travel more than 100km (one way) from home to treatment or needing to travel more than 200km in total treatment in one week, and a carer who has been certified as being medically necessary by the medical practitioner or specialist (cancercouncil.com.au, N/A). The program also covers accommodation costs for patients traveling long distances.

Scotland developed a transport system in its health system called transport for health and Social care in Scotland (Hine & Mitchell, 2017; Scotland, 2011). The system is part of the health insurance system, which is a work between both public and private sectors. The healthcare transportation system uses three groups of drivers: volunteer drivers, Private Sector, and Voluntary Sector. The service is available in both the National Health Security (NHS) and Scottish Ambulance Patient Transport Service.

In the UK, a Healthcare Travel Cost Scheme is included with the National Health Security. These services provide free transport to and from hospital for: 1) people whose condition means they need additional medical support during their journey; 2) people who find it difficult to walk; 3) parents or guardians of children who are being transported (Corner, 2007; National-Health-Security, 2020; Richards, 2007).

An example of the application of transportation in many of these countries illustrates the possibility and importance of access to healthcare. Especially for the elderly who are vulnerable with specific health needs. To develop transportation systems to promote access to health services, initiatives should be initiated to reduce access disparities. We should push forward policies to promote access as well as improve service quality.

## Conclusion

This article reviews the situation of inequality in access to healthcare among the elderly in Thailand. The cause of such inequality comes from 3 main components: 1) Health needs of the elderly in the spatial dimension 2) Changed socioeconomic characteristics, causing the elderly to be left behind, case of the disappearance of public buses, and 3) unplanned distribution of medical resources, improper distribution of health personnel with the proportion of the elderly in the spatial dimension, and lack of planning to deal with the elderly that differ from region to region. These problems will create a higher health disparity among the elderly in Thailand. Reducing access disparities requires integrating technology and physical solutions, but the distribution of doctors is still a matter of concern. We review the public transport systems available internationally developed in use in national health care systems such as Australia, England and Scotland. Examples from such countries could guide the development of policy to promote access to health services in Thailand.

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