



## Synthesis the development model of the elderly's health service system towards the excellence of tertiary hospitals attached to the Royal Thai Navy

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(Received 15/02/2022, Revised 19/03/2022, Accepted 19/03/2022)

### ABSTRACT

This research was qualitative research and aimed to study the elderly's health service system of tertiary hospitals and synthesize the development model of the elderly's health service system of tertiary hospitals attached to the Royal Thai Navy. The data had been collected between October 2019- March 2020. The analysis was conducted to find the development model of the elderly's service health system towards the excellence of tertiary hospitals attached to the Royal Thai Navy. The analysis applied the key information to support 17 key informants for processes which are interviewing, and recording of information from focus group discussion, recording of sound and pictures and using of documents and reports. The acquired information went through the Content Analysis by determining the content from interpretation and determining the issue framework of the development model of the elderly's health service system towards the excellence in tertiary hospitals attached to the Royal Thai Navy.

The research revealed the results of development model of health service system as the following: 1) The result of the society engaged elderly in the perspective of efficient operation was activities towards the excellence namely clear policy of health service and development of the potential of the club for the elderly, health promotion, promotion of service mind and development of knowledge source of the club for the elderly. 2) The home attached elderly in the perspective of efficient operation showed result about management of relationships of networks, increase the potential of network and home visits, support of participation from families, clubs, temples. 3) The bedridden elderly in the perspective of efficient operation was about development of knowledge and innovation; assessment of the health behavior and annual medical checkup, home visit, activities of health promotion and rehabilitation of specific diseases, development of potential of the caregivers of the bedridden elderly. And, 4) The guideline of development elderly's health service system by establishing

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the Geriatric Medical Center, Naval Medical Department, would serve as the center of operation on the elderly, the administrative center of control, supervision, follow-up, and coordination of network, regular up to date risk management of the elderly, assessment of performance of the elderly's health service system of the Royal Thai Navy, and linkage of works on the elderly of hospitals attached to the Royal Thai Navy by using telemedicine network system.

**Key words:** Society engaged elderly, Home attached elderly, Bedridden elderly, Development model of health service system, Excellence of tertiary hospitals

## 1. Introduction

Currently, in Thailand, there is a tendency for the change in population structure towards the ageing society. Well-being, coherent overall and balanced physically, mentally, socially, and intellectually are intertwined with factors such as environment, which is a key factor in the development of the aging service system (World Health Organization, 2015). The elderly according to the Activity Daily Living (ADL) are divided into three groups namely Group 1: Society engaged elderly with ability to help themselves, they may have chronic disease but controllable, they can engage in social activities, and can help others; Group 2: Home attached elderly with ability to help themselves to a certain extent, they need some assistance, they may have chronic diseases and diseases hindering movement, they have limitation in participating in social activities; Group 3: Bedridden elderly with inability to help themselves, they have many chronic diseases, complication diseases, or terminally ill patients who cannot participate in social activities. The conditions of social problems are divided into those with no worries and those with worries such as lack of caregiver, they cannot help themselves, they are left on their own, ignored, not properly cared for, and poor (Division of Elderly Potential Promotion, 2016).

In Thailand, the announcement of the Ministry of Defense on medical and public health services for specific convenience and speed of the elderly B.E. 2554 (Ministry of Public Health, 2011). contained the content of Item 1: Assign service units at the level of hospitals under the Ministry of Defense to provide medical and public health services to the elderly except in times of irregularities, fighting, or war as follows: 1) Provision of special channel for the elderly separated from general service recipients in the outpatient department 2) Determination of process and period of time for providing service to the elderly through visible board and announcement during service. The descriptive study by Wichuda Tatkaeo and Chanin Chareonkul assessed the situations of the elderly's health service provision in hospitals attached to the Royal Thai Army. The study found that the hospitals attached to the Royal Thai Army could provide special channel to service the elderly in the outpatient department. The problems and obstacles of service provision included shortage of personnel to provide



special services to the elderly, and inconvenient locations with difficulties in arranging for specific clinics for the elderly (Wichuda Tatkaeo & Chanin Chareonkul, 2017). As part of this study of the development model of the elderly's health service system of the Royal Thai Navy, the researcher studied the system of services of specialized clinics provided for the elderly as well. It was the researcher's evaluation that the tertiary hospitals attached to the Royal Thai Navy could set up geriatric clinics as Queen Sirikit Naval Hospital was already operating a geriatric clinic but not Somdech Phra Pinklao Hospital.

The Royal Thai Navy is a large organization with a large number of retired government officials every year. The main problem was that the retired government officials did not have families or their families were not ready to take care of them when they fell ill. The Royal Thai Navy started to focus on the problems by considering its policy in 2016 on general affairs item 5: Development of workforce welfare system to efficiently respond to service recipients including off-duty personnel and the general public. The Royal Thai Navy assigned the Naval Medical Department to be responsible for prevention of illness and care for the elderly treated at the hospitals. Work started on the development of health promotion of the elderly at Queen Sirikit Naval Hospital at Sattahip District, Chonburi. Activities included elderly club, vaccinations for the prevention of the elderly's necessary diseases, program arrangement for chronic diseases for those at risk of diabetes, guideline arrangement to prevent the risk of dementia, and clinic for the elderly which was a special channel for the elderly's health service. Somdech Phra Pinklao Hospital, Thonburi District, Bangkok provided a nursing home for the elderly "Pritvej Homecare" with health service for the elderly by a team equipped with quality standards for comfort and warmth of home. It was for both male and female elderly with over 60 years old. Activities were arranged according to the physical conditions and appropriateness of service recipients such as making merit by offering alms to monks, prayers, conversation, use of psychology to stimulate the working of the brains, exercises, and recreational activities. Moreover, the center also provided doctor's visit twice a month, rehabilitation doctor's visit once a month, and registered nurse's evaluation visit four times a month. The operation of the center faced the problems of insufficiency to support the bedridden elderly. As there were so many of them that caregivers could not provide enough services, the elderly were taken in for 24-hour care. The lessons learned from the problems of professional, multidisciplinary team of the two tertiary hospitals attached to the Royal Thai Navy were that the main problems included falling, use of medicines in the elderly, environment not appropriate to the elderly, mental and social problems, and shortage of caregivers for the elderly attached to home or bedridden. Based on the literature review of the research of Royal Thai Naval Staff College on Development of Quality of Life of the Royal Thai Navy's Retired Government Officials (Puvanant Wiputhanuphongs, 2017) it was found that retired government officials had no caregiver.



The researcher conducted research of three groups of the elderly namely society engaged elderly, home attached elderly, and bedridden elderly which no tertiary hospital attached to Ministry of Defense had conducted research on. The research results would concretely and clearly yield the model of the three groups of the elderly which would serve as the guideline to develop the elderly's health service system. The researcher applied the conceptual framework of Balanced Scorecard in managing the organization to concretely accomplish success, appropriately evaluating organization's performance, and assisting the organization to implement the strategy. (Kaplan & Norton, 1996) The analysis of internal factors used McKinsey 7S Framework with the basic principle that an organization's efficiency came from the relation within the organization of various factors which would yield effectiveness and reach the target of strategic implementation. (Singh, 2013) Analysis was also conducted with the external factors by using the concept of PESTLE Analysis which would help understand the overall picture of the environment and external factors, affecting the development of health service system. (Rastogi & Trivedi, 2016) The analysis of the relation of the concept would lead to the development model of the elderly's health service system towards the excellence of tertiary hospitals attached to the Royal Thai Navy. The elderly's different health and social characteristics and the development model of health service system for the society engaged elderly, home attached elderly, and bedridden elderly were sources of knowledge acquired from the research which could be applied in primary and secondary hospitals according to the context of each hospital. Once the Naval Medical Department acquired the development model of the elderly's health service system towards the excellence of tertiary hospitals, and once the researcher presented the model to the executives for application, it was expected that the results of the elderly's health service system would respond to the needs of the elderly, seeking services. It would encourage motivation, and pride in the elderly's own value. It would bring to the elderly happiness, human dignity, and good quality of life. At the same time, all sectors would cooperate to assist and solve the problems of health service system in the ageing society in the future.

## 2. Objectives

2.1 Study the elderly's health service system of tertiary hospitals attached to the Royal Thai Navy.

2.2 Design the development model the elderly's health service system towards the excellence of tertiary hospitals attached to the Royal Thai Navy.

## 3. Methods

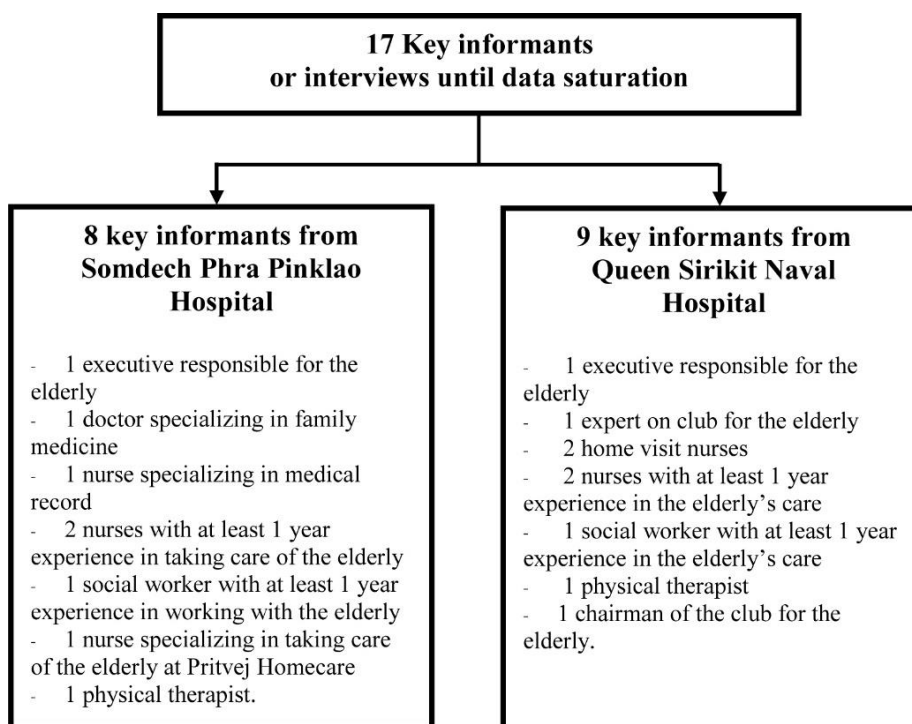
### Study design and population

There were 17 key informants to synthesize the development model of the elderly's health service system towards the excellence of tertiary hospitals attached to the Royal Thai

Navy or interviews until data saturation. The researcher was an important tool in the interviews.

There were 8 key informants from Somdech Phra Pinklao Hospital namely 1 executive responsible for the elderly, 1 doctor specializing in family medicine, 1 nurse specializing in medical record, 2 nurses with at least 1 year experience in taking care of the elderly, 1 social worker with at least 1 year experience in working with the elderly, 1 nurse specializing in taking care of the elderly at Pritvej Homecare, and 1 physical therapist.

There were 9 key informants from Queen Sirikit Naval Hospital namely 1 executive responsible for the elderly, 1 expert on club for the elderly, 2 home visit nurses, 2 nurses with at least 1 year experience in the elderly's care, 1 social worker with at least 1 year experience in the elderly's care, 1 physical therapist, and 1 chairman of the club for the elderly. The key informants were specifically chosen to be able to answer the interview questions and provide accurate and clear in-depth information as shown in Figure 1



**Figure 1** *Sample size and sampling procedure*

### Qualitative tools

Part 1 Semi-structured interview used the concept of Balanced Scorecard in conjunction with McKinsey 7S Framework and PESTLE Analysis and used the questions by applying the research of Pisit Piriyapun et al on the development of standards for the elderly's health care in overnight care center (Pisit Piriyapun, Wetha Klinwichit, Paungtong Inchai, Rarcharneeporn



Subgranon, & Waree Kangchai, 2015). The structure of the questions was open-ended to allow the key informants to express their opinions on the elderly's health care system at present and in the future that should be developed and analysis of GAP according to the standards

Part 2 Prioritization of development by requesting the interview respondents to give the scores of each standard by using the criteria of prioritizing the problems through 4 compositions of Clark and Othumval (Clark & Oswald, 1994), The researcher applied it in prioritizing the development as follows:

1. Size of the problems: Based on the problems, it was not possible to develop the elderly's health service system towards the excellence and therefore development was needed, with the scoring criteria as follows:

No problem at all	scoring 0 score
Size of the problem 1-25%	scoring 1 score
Size of the problem 26-50%	scoring 2 scores
Size of the problem 51-75%	scoring 3 scores
Size of the problem 76-100%	scoring 4 scores

2. Intensity of the problems. Based on the operation with standards, if there was no development, it would impact the health service system and could not develop towards the excellence, with the scoring criteria as follows:

No intensity at all	scoring 0 score
Intensity 1-25%	scoring 1 score
Intensity 26-50%	scoring 2 scores
Intensity 51-75%	scoring 3 scores
Intensity 76-100%	scoring 4 scores

3. Difficulties in development: Based on the standards, what were the difficulties in development, with the scoring criteria as follows:

Can never be developed	scoring 0 score
Very difficult to develop	scoring 1 score
Difficult to develop	scoring 2 scores
Easy to develop	scoring 3 scores
Very easy to develop	scoring 4 scores

4. Demand for development: Request the interview respondents to consider whether the standards had low or high demand for development towards the excellence, with the scoring criteria as follows:

No demand for development	scoring 0 score
Low demand for development	scoring 1 score
Fair demand for development	scoring 2 scores
High demand for development	scoring 3 scores
Highest demand for development	scoring 4 scores



When the interview respondents scored the priority of development, the researcher concluded the total scores through priority according to the standards and used them to support the Content Analysis by determining the Thematic Analysis to find the conclusion of the main issue in order to consider the possibility of interpretation and determine the development model of the elderly's health service system towards the excellence of tertiary hospitals attached to the Royal Thai Navy.

### **Inspection of the quality of the tools used to collect data**

The validity of the interview forms was reached by submitting the developed interview forms to the experts to investigate the content validity by using the triangulation technique, data from collection of secondary data, relevant documents and research works, and then verifying the information from the interviews. The validity of the interview forms in compliance with the appropriateness of the conceptual framework used the concept of the Balanced Scorecard in conjunction with the concepts of McKinsey 7S Framework and PESTLE Analysis. The Delphi Method was conducted by requesting opinions from 11 experts consisting of 2 experts on environmental management for the elderly, 1 expert on geriatric psychology, 1 expert on research ethics, Naval Medical Department, 1 expert on human resource, Naval Medical Department, 3 experts on the elderly, Naval Medical Department, 1 expert on policy and plan, Naval Medical Department, 1 expert on health promotion, Naval Medical Department, and 1 nurse specializing in physical ability and health promotion, Naval Medical Department, yielding IOC = 0.92 After consideration from the experts, the researcher improved the interview forms according to the comments of the experts, and under the recommendations of the main advisor and the joint advisors. Then, the developed interview forms underwent the try out.

The researcher tested the developed interview forms with 15 officials and the elderly with similar characteristics as the key informants. The information from the analysis was submitted back to the key informants for inspection once again before concluding if there was the same understanding or the same perception of the key informants to confirm accuracy. It was also the investigation of the researcher's reliability at the same time.

### **Process of the interviews**

1) The researcher's self-introduction with the elderly and health care officials who would be interviewed.

2) Explanation of the objectives of the interviews to the elderly and health care officials for their understanding prior to actual interviews.

3) Interviews in the order of the interview forms and use the language appropriate to the elderly but similar to the old meaning in the interview forms. Easily understood language should be used for clearer understanding.





4) The interviews should not rush for the answers from the elderly. Nor should there be leading questions to obtain the desired answers.

5) All answers were inspected for completeness. For any doubt in any answer, the elderly should be asked again prior to the interviews.

6) Customary protocol of thank you and good bye to the elderly and health care officials every time at the end of each interview.

### **Protection of the sample's rights**

This research protected the rights of those participating in the research through the committee on research ethics of the Naval Medical Department, project code RP019/62, with the approval date on 21 August 2019 and the date of the end of approval on 20 August 2020. The letter for permission was done through the hospital director. Those participating in the research were explained about the objectives of the research, process of data collection, expected benefits from the research, and signatures to willingly participate in the research, including the rights to withdraw from the research at any time without impacting on receiving services. They were also assured that their information would be kept confidential and would be disclosed by presentation of the overall information for the purpose of research only.

### **Qualitative data analysis**

1) Analysis was conducted to find the development model of the elderly's health service system towards the excellence of tertiary hospitals attached to the Royal Thai Navy by using the results of the quantitative data analysis namely personal information, quality of life, and demand of health service of the elderly seeking services in tertiary hospitals attached to the Royal Thai Navy as the key information to support the other 17 key informants using the process of interviews and recorded information from the focus group discussion, recordings of sound and pictures, as well as the use of reports and conducted the content analysis of the information, using QDA Miner Lite and determining the thematic analysis in reaching the conclusion of the main issues used to consider the possibility of interpretation, in parallel with the advisors' recommendations.

2) Determination of the conceptual framework: The development model of the elderly's health service system towards the excellence of tertiary hospitals attached to the Royal Thai Navy was based on the guideline of determination of the conceptual framework under the 4 perspectives and according to the 3 groups of the elderly namely society engaged elderly, home attached elderly, and bedridden elderly. The information was summarized and interpreted and the tables were set up for comparison and conclusion.

The researcher inspected the accuracy and reliability of the results of the analysis as follows:





1) Internal inspection by looking back if the obtained information and methods of obtaining the information were appropriate or of good quality, and if the process of data analysis followed the strict principles

2) External inspection by using the methods of the Playback Method from the key informants by holding meetings with important people and people relevant to the development of the elderly's health service system

3) Conformability: As for the inspection of the accuracy of the researcher, the information from the interviews were checked with the knowledge from which the researcher reviewed the relevant theoretical concept and research documents, and clear proof of conformability. The information from records, interviews, and transcription every time from the 17 key informants was printed out for the advisors to investigate on a regular basis until the information or complete analysis results were obtained.

#### 4. Results

The researcher presented the research results as follows:

1. Current health service system for the elderly of tertiary hospitals attached to the Royal Thai Navy

Based on the study of the mentioned documents, the researcher concluded that the Committee of knowledge management, Naval Medical Department, compiled and screened the data processing from hospitals under Naval Medical Department. In the current context of Naval Medical Department, it is the system to take care of the retired government officials and their families under Naval Medical Department. The system can be concluded to link to the development of the elderly's health service system towards the excellence of tertiary hospitals attached to the Royal Thai Navy

2. Assessment of the elderly's health system of tertiary hospitals attached to the Royal Thai Navy

Based on the interviews with the key informants and the results of data analysis of the elderly seeking services at tertiary hospitals attached to the Royal Thai Navy, it was found that the society engaged elderly had top five demands of care upon arrival at the hospital namely demand of initial diagnosis with accuracy, speed, and timeliness, demand to set up clinic specifically for the elderly, demand of quality treatment planning, demand of convenient and speedy services from arrival at hospital until departure for home, and demand for safe environment such as rail in restroom, sufficient lights, non slippery floor. So, what the elderly wanted the most were good health, participation, security, resulting in good quality of life and happiness. Therefore, the work on society engaged elderly seeking services in tertiary hospitals attached to the Royal Thai Navy towards the excellence in response to the demand of the elderly with good health, participation in activities, and security, resulting in good quality of



life, and happiness should follow the practice on the elderly according to the concept of Balanced Scorecard in management to enable the organization to concretely achieve success.

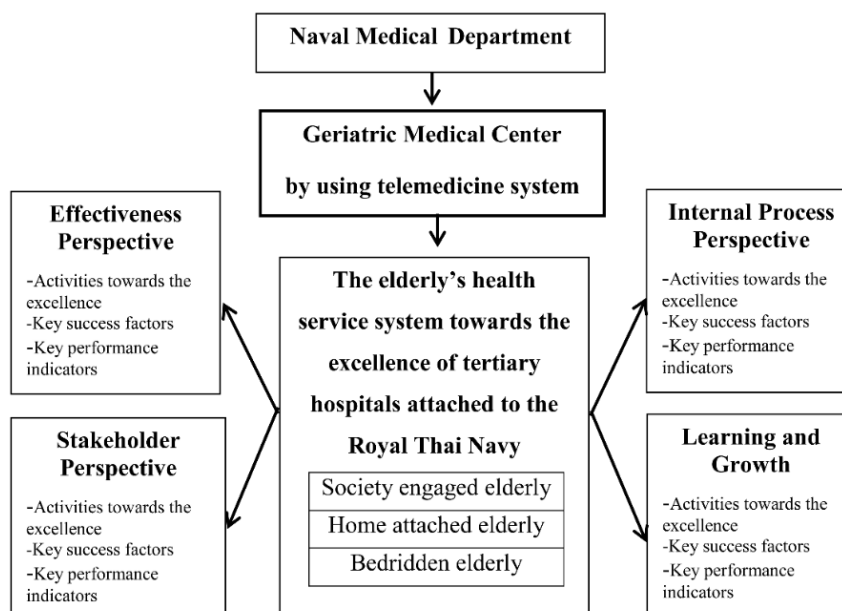
Based on the interviews with the key informants and the results of data analysis of the elderly seeking services at tertiary hospitals attached to the Royal Thai Navy, it was found that the top five demands of the home attached elderly while seeking services at hospitals namely demand to undergo initial diagnosis that was accurate, fast, and timely, demand for fast special channel for the elderly, demand for quality treatment planning, demand for convenient and fast service from arrival at the hospital until going home, and demand for safe environment such as rail in restroom, sufficient lights, non slippery floors. Therefore, the work on the home attached elderly seeking services at tertiary hospitals attached to Royal Thai Navy towards the excellence in response to the demand of the elderly, resulting in good health, good quality of life, and happiness should work on the elderly according to the concept of the Balanced Scorecard in management to enable the organization to concretely achieve success.

Based on the interviews with the key informants and the results of data analysis of the elderly seeking services in tertiary hospitals attached to the Royal Thai Navy, it was found that the first five demands of care of the elderly seeking services at hospitals included demand of speedy and special channel for the elderly, demand of dental care by dentists at least once a year, demand of medicine support with equal quality and reduced medicine costs, demand to be admitted at overnight center of the care for the elderly, and demand to borrow medical devices after discharge from hospitals. Therefore, work on the bedridden elderly seeking services in tertiary hospitals attached to the Royal Thai Navy towards the excellence could respond to the needs of the elderly, rehabilitate health, reduce complications, resulting in good quality of life, happiness, and work on the elderly should be based on the concept of the Balanced Scorecard in management to ensure the organization to achieve concrete success.

3. Development model of the elderly's health service system towards the excellence of tertiary hospitals attached to the Royal Thai Navy

Based on the results of the content analysis by determining the content from interpretation, together with the results of the quantitative data analysis to support the guideline to determine the conceptual framework of Balanced Scorecard in the 4 perspectives according to the elderly groups namely the society engaged elderly, the home attached elderly, and the bedridden elderly, the researcher presented the development model of the elderly's health service system towards the excellence of tertiary hospitals attached to the Royal Thai Navy in the future in the same direction. The key informants suggested the guideline of development by establishing the the Geriatric Medical Center, Naval Medical Department, would serve as the center of operation on the elderly, the administrative center of control, supervision, follow-up, and coordination of network, regular up to date risk management of the elderly, assessment of performance of the elderly's health service system

of the Royal Thai Navy, and linkage of works on the elderly of hospitals attached to the Royal Thai Navy by using telemedicine network system, by dividing the elderly groups into the society engaged elderly, the home attached elderly, and the bedridden elderly as in Figure 2



**Figure 2** Overall development model of the elderly's health service system towards the excellence of tertiary hospitals attached to the Royal Thai Navy

## 5. Discussion

Development model of the elderly's health service system towards the excellence of tertiary hospitals attached to the Royal Thai Navy

The results of the content analysis by determining the content from interpretation, data analysis are used to support the guideline to determine the conceptual framework of the concept of Balanced Scorecard with the 4 perspectives according to the elderly groups namely the society engaged elderly, the home attached elderly, and the bedridden elderly. The researcher presented the development model of the elderly's health service system towards the excellence of tertiary hospitals attached to the Royal Thai Navy as follows:

For the development of the elderly's health service system towards the excellence of tertiary hospitals attached to the Royal Thai Navy to be in the same direction, the key informants recommended the direction of development by establishing Geriatric Medical Center, Naval Medical Department.

The literature review of Andrès E. (Andrès et al. ,2018) studied the experimentation of telemedicine in elderly patients with chronic heart failure: A study prospective in 175 patients found that Hajjam, a heart failure in France requires more than 100,000 hospitalizations a year, accounting for 5 percent of all hospitalizations and is the cause of hospital admissions among the elderly. It is very well documented in heart failure and diabetes. Telemedicine may help,

in particular, preventing emergencies and re-hospitalizations. It may also make it possible to structure an integrated care path, which is the most important evidence that found in heart failure which is consistent with the study of Fadhil A. (Fadhil, 2018) studied beyond patient monitoring: conversational agents role in telemedicine & healthcare support for home-living elderly individuals that is necessary for a system to dynamically interact with the aging population to collect health data and provide support, especially after hospital discharge or home care monitoring. Many medical devices are delivered along with the telemedicine system which will support the Naval Medical Department linking the elderly operations of the Royal Thai Navy hospitals by using telemedicine network system by categorizing the elderly into society engaged elderly, home attached elderly and bedridden elderly as shown in Figure 3

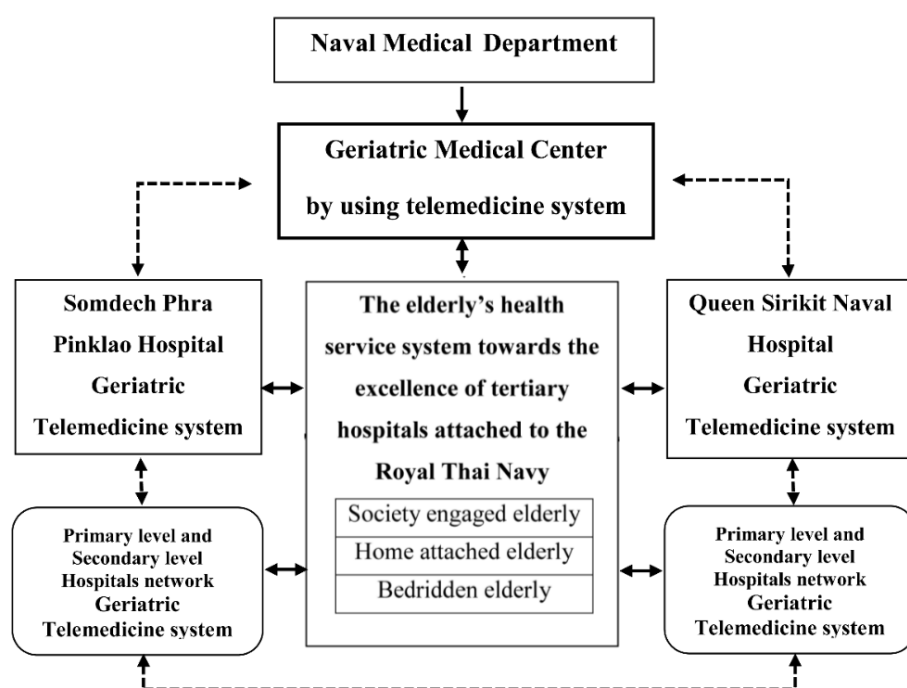


Figure 3 Geriatric Medical Center by using telemedicine network system

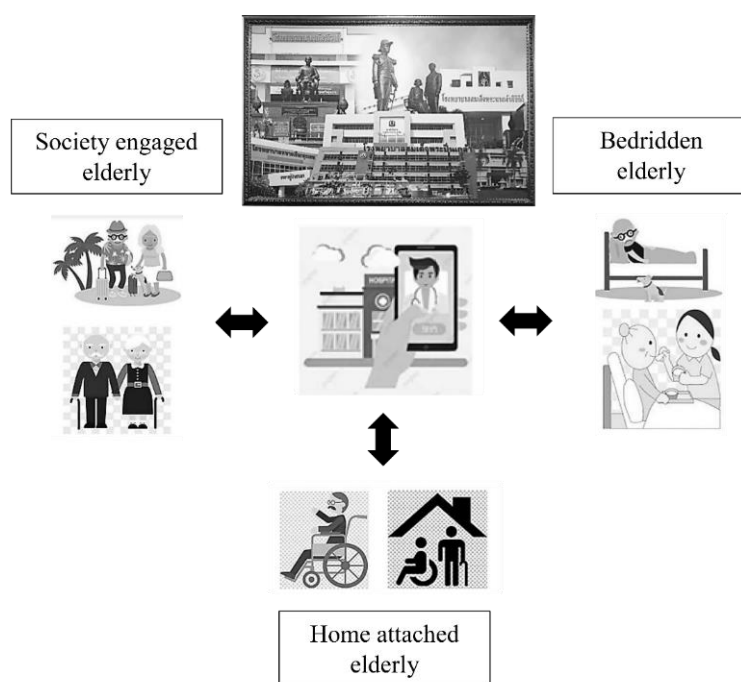
## 6. Recommendations

### Policy recommendations

1. Formulation of clear policy towards the excellence of tertiary hospitals attached to the Royal Thai Navy and establishing Geriatric Medicine by using telemedicine system as shown in Figure 4

2. Management of the elderly's health service system by applying the concept of the Balanced scorecard for the success of an organization by synthesis of 4 perspectives namely Effectiveness perspective, Stakeholder perspective, Internal Process perspective, and Learning and growth.

3. Organizational management in improving structure and arranging environment appropriate to the elderly seeking services in tertiary hospitals attached to the Royal Thai Navy for safety to the elderly without accident of falling while seeking services at the hospital.
4. Develop the potential of the personnel working on the elderly and develop training specifically on the elderly.
5. Develop the potential of the caregivers of the elderly especially the bedridden elderly with non-communicable diseases but with complications requiring assistance in daily living from the caregivers with potential.
6. Allocation of budget for the operation on the elderly in health promotion, disease prevention, treatment, and rehabilitation will develop work on the elderly towards the excellence in health service system and there is a system for assessing expenses in the event of a financial crisis.



**Figure 4** Geriatric Medical Center by using telemedicine system

### Operating recommendations

1. The results of the mixed quantitative and qualitative data analysis aim to know the demand of health service based on the elderly's abilities of daily living while seeking services in tertiary hospitals attached to the Royal Thai Navy. Naval Medical Department can apply the development model of the elderly's health service system towards the excellence to respond to the needs of the service recipients namely the society engaged elderly, the home attached elderly, and the bedridden elderly.



2. Hospitals attached to the Royal Thai Navy apply the development model of the elderly's health service system in the context of each hospital and continuous development according to the context of each hospital as the potential of each hospital is not the same. So, the application will be in the part that can operate.

3. Hospitals attached to other Ministries can apply the model as appropriate.

#### **Academic recommendations**

1. There should be study, research, development, and enhancement by follow-up and assessment of practice of application of activities towards the excellence such as formulation of clear policy to work on the elderly, activities that are in line with the elderly's abilities of daily living, and development of structure and environment appropriate to the elderly by determining key performance indicators and assessment of the key performance indicators to develop the response to the needs of service recipients and hospital executives on the elderly.

2. Additional study of the elderly's communities should be conducted to analyze the elderly's quality of life and demand to order to forward to the communities for further participation in health care.

3. There should be study and research of the development model of the elderly's health care system in primary and secondary hospitals attached to the Royal Thai Navy as key information for referral of the elderly and for development of health service system of the elderly seeking services in hospitals attached to the Royal Thai Navy in response to the needs of health service of the elderly seeking services based on the potential and cover primary, secondary, and tertiary hospitals.

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