Medical Trip Planning with Activity Tracking System: MTP System
ระบบการวางแผนการท่องเที่ยวเชิงการแพทย์แบบติดตามกิจกรรม

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Abstract

The itinerary of medical tourists who travel to receive medical service procedures in an overseas hospital is a complicated activity that needs to be thoroughly coordinated between the medical tourists and the medical service providers. This research presents the development of software for the planning of medical trips. In the evaluation, the researchers conducted a questionnaire to assess the satisfaction of the medical tourists with the use of this system by selecting 44 middle eastern persons interested in using medical tourism services at Praram 9 Hospital in Bangkok. The software was implemented as a collaboration between the medical tourists and the hospital in order to obtain the information needed by the medical clients and the hospital's medical services preparation staff. The six phases of the process are composed of the trip preparation, the arrival in Thailand and registration as a patient, the medical treatment procedure and discharge, the recuperation and travel, the departure to return home, and the follow-ups and customer-related service management. The collaborative results will produce the medical trip plans by tracking the milestones and activities.

The software enhances the self-confidence of the medical tourists, so that they can take care of themselves and coordinate with the related persons. Moreover, the hospitals can follow up to arrange for the patients to travel to the destination, receive the treatment, and return home safely.

บทคัดย่อ

การเดินทางของนักท่องเที่ยวเชิงการแพทย์เพื่อไปรับการรักษาที่โรงพยาบาลในอีกประเทศหนึ่งเป็นกิจกรรมที่ซับซ้อนซึ่งมีความจำเป็นต้องมีการประสานงานระหว่างนักท่องเที่ยวเชิงการแพทย์และโรงพยาบาลผู้ให้บริการ งานวิจัยนี้นำเสนอการพัฒนาระบบซอฟต์แวร์สำหรับการวางแผนการเดินทางเพื่อรับบริการทางการแพทย์และพักฟื้นที่ประเทศจุดหมายปลายทาง ในการประเมินผลผู้วิจัยได้จัดทำแบบสอบถามเพื่อประเมินความพึงพอใจที่มีต่อการใช้งานระบบโดยคัดเลือกกลุ่มชาวตะวันออกกลางที่สนใจจะเข้ามาใช้บริการการท่องเที่ยวเชิงการเชิงการแพทย์จำนวน 44 คน ที่โรงพยาบาลพระราม 9 กรุงเทพมหานคร ซอฟต์แวร์ที่พัฒนาขึ้นเป็นลักษณะที่ทำงานแบบร่วมกันระหว่างนักท่องเที่ยวเชิงการแพทย์และโรงพยาบาล เพื่อให้ได้ข้อมูลที่จำเป็นต่อผู้เดินทางและเจ้าหน้าที่โรงพยาบาลเพื่อเตรียมความพร้อมในการให้บริการทางการแพทย์ที่โรงพยาบาล ขั้นตอนการเดินทางมี 6 ขั้นตอนประกอบด้วย การเตรียมตัวก่อนเดินทาง การเดินทางถึงประเทศไทยและลงทะเบียนผู้ป่วย การเข้ารับการรักษาและจำหน่ายผู้ป่วยออกจากโรงพยาบาล การพักฟื้นและท่องเที่ยว การเดินทางกลับสู่ภูมิลำเนา และการติดตามบ่มเพาะ ซึ่งผลลัพธ์จากการร่วมกันวางแผนจะได้แผนการเดินทางและการรักษา โดยการติดตามกิจกรรมหลัก (milestone) และกิจกรรมย่อย (activity) ซอฟต์แวร์ดังกล่าวนี้ช่วยให้ผู้เดินทางท่องเที่ยวเชิงการแพทย์มีความมั่นใจที่จะสามารถดูแลตัวเอง ติดต่อประสานงานกับทุกฝ่าย นอกจากนี้ทางโรงพยาบาลก็สามารถติดตาม จัดการดูแลคนไข้ให้เดินทางมายังจุดหมายปลายทาง รับบริการรักษาจนเสร็จเรียบร้อย และกลับสู่ภูมิลำเนาโดยสวัสดิภาพ

คำสำคัญ: การท่องเที่ยวเชิงการแพทย์, วางแผนการท่องเที่ยว, ระบบการติดตามกิจกรรม

Introduction

The term 'medical tourism' refers to when a person travels abroad in order to undergo a medical treatment procedure and then enjoys recuperation at a tourist attraction spot. It occurs under the condition that the medical expenses at the destination abroad are less costly than the medical expenses in their country of origin together with receiving better quality standards (Medical Tourism Association, 2018). At present, medical tourism in Thailand is still an informal phenomenon, mostly promoted and supported by famous international hospitals such as Bangkok Hospital, Bumrungrad International Hospital, etc. The medical tourism value chain consists of the medical services, the medical procedure, and the period of recuperation. During the rehabilitation process, the medical tourists can travel to various tourist attractions following their physician's consideration and approval. The Board of Investment of Thailand has reported that Thailand's medical tourism market is the largest segment in Thailand

(Thailand's Medical Industry, 2017).There was an increase of approximately 137,000 medical tourists in 2007,twelve years ago, and this was also forecast to increaseby440,000 visitors in 2018 (Kansinee et al., 2014). In 2015, the Tourism Economic Report stated that the income from medical tourism was approximately 100 billion baht and that this trend will increase in the future (Ministry of Tourism and Sports, 2016). Moreover, the Kasikorn Research Centre (2018) forecast that about 2.5 million medical tourists will travel and receive medical services in Thailand during 2018. This accounts for about 6-8% of the total tourist arrivals in Thailand, an increase of 4.2% from 2017.

Medical tourism is different from general tourism in the sense that it is related to medical treatment occurring within the entire tourism cycle, e.g. requesting medical treatment before the trip, including the estimated costs, notification when medical tourists arrive at the airport and follow-ups after the treatment. Therefore, collaboration between the medical tourists and the hospitals results in a smooth well-planned trip. At present, the interaction between the medical tourists and the hospitals is in an informal stage. This paper presents the application of technology to the medical tourism process that covers the entire medical tourism cycle for development of medical trip planning with an activity tracking system.

Statement of the problem

The medical tourism industry usually provides both inbound and outbound clients with limited medical information regarding the hospitals. At present, Thailand is famous as a medical service provider, but one that only offers a few selected well-known hospitals such as Bangkok Hospital and Bumrungrad International Hospital to foreign medical clients. Hence, the foreign medical tourists have quite limited options in Thailand. This lack of choice limits their medical treatment services and recuperation options, resulting in a narrow choice range of medical treatment quality and level of treatment costs. The medical service providers do not have the tools to support and communicate with the clients in order to set up the planning of the trip involving medical services and rehabilitation at the tourist attraction sites.

The medical tourism industry differs from the general tourism industry because it must be linked to the database system of the medical services providers. This system can also support the communication between the providers and the medical tourists and their relatives. The design and development of this system for medical tourism offers a varied range of aspects, such as (1) the medical services, (2) the medical processing and management services, and (3) the recuperation services.

This paper presents the development of the medical trip planning system that includes activity tracking and provides the clients/medical tourists with the information related to the medical procedure, the expenses, the details of the medical facilities and the recreation place. This information will help with reaching a mutual decision between the medical tourist and the hospital service provider to create the medical trip itinerary through interaction. The date of the important milestones and activities are also recorded in the system. Finally, the documents are created when the medical tourist travels to Thailand.

The research and development of the medical trip planning system are significantly involved with the medical tourism industry. The medical service providers can apply the medical trip planning system to the medical tourism cases completely (end-to-end) from the beginning of the planning of the trip and milestone tracking until actually undergoing the medical service procedure, recuperating at a tourist attraction, and then returning to their country of origin.

Hereafter, the Medical Tourist will be referred to as the MT and the Hospital as the HOS.

Review of the Literature

A trip planning system is a tool to support the planning of a journey before the trip occurs in order to save time, to save costs, to recommend tourist attractions, etc. At present, the trip planning tool that is used for the general tourism industry is provided, and its popularity is due to the fact that it is very informative for the travelers when planning their trip. For example, although the recommender systems are still not widely used in the tourism industry, the development of this type of tool has been examined in recent research studies, such as Moreno et al. (2015); Damianos et al. (2015); Aldy et al. (2016); Grzegorz et al. (2016). Moreover, the trip planning tools are also used with various forms of technology such as Ontology (Jian et al., 2005), Software Agent (Suna & Lee, 2004), Case-based techniques (Ricci & Werthner, 2001; Zahra et al., 2017), etc. In some cases, the implementation of the trip planning system may use the Ontology, Case-based, and Software Agent techniques combined together in order to increase the overall efficiency and accuracy. In Thailand, the research work on trip planning was conducted by Hongladda Hongladda, Anaraki & Suchai (2016), in which the short trip planning (2-3 days) in Ratchaburi province was designed and developed.

Most of the trip planning tool development is designed to be based on the sequence of the tourism value chain process. The general tourism value chain and medical tourism value chain are different; in other words, the medical tourism value chain involves medical treatment that is under the physician's approval and supervision. Figure 1 shows that the value chains of both general tourism and medical tourism have three stages: the pre-trip stage, the on-trip stage and the post-trip stage (Shanmugam, 2013). However, applying this type of trip planning tool in medical tourism cannot be implemented because medical trip planning must be a collaboration to create the trip plan between the medical tourists and the hospitals. Based on the review of the research on medical tourism trip planning, there have been no research reports on the development of medical trip planning with an activity tracking system.
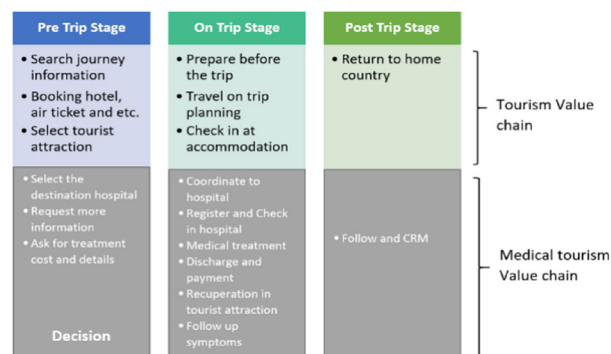
Figure 1 The tourism and medical tourism value chains are divided into three stages: the pre-trip stage, on-trip stage, and post-trip stage.

The Medical Trip Planning Structure

This section explains the medical trip planning structure, which is the hospital or medical service provider's information technology development process. This process assists the medical tourist to design the trip plan by coordinating with the medical service provider. The creation of the medical trip plan must involve the consideration of the details of the medical services and the travel cycle.

There are six medical tourism process phases related to the hospital chosen as the destination by assuming that the medical tourist has chosen a hospital or medical service provider in Thailand. The six process phases are described as follows.

P1: Trip Preparation

It is assumed that the medical tourist has decided to take a medical trip to hospital "A", which has set up the medical trip planning system. Then, the MT will login in order to create the trip plan.

The medical tourist with a health problem, who has to be admitted, will search for the medical service provider's information and other related information on the MTP system in order to request more details. Then, the provider will share the requested information, cost estimation and physician's service schedule with the MT user, who will make a decision and send a confirmation to the provider. In this phase, the MT will confirm the trip plan with the HOS and proceed as per the planned trip schedule. Thereafter, the HOS will prepare to welcome the MT and their relatives when they arrive in Thailand.

P2: Arrival in Thailand and registration as an in-patient

When the HOS receives the confirmation, they will prepare to welcome the MT and their relatives by arranging a hotel shuttle service and other related facilities. Then, the HOS will take the MT to the hospital to register or check in as a hospital patient.

P3: Medical Treatment and Discharge Procedure

On the scheduled date of admittance, the HOS will inform the patient about the treatment details, its side effects and the treatment duration. After the patient has undergone the medical service procedure and the physician has medically

approved the patient as being in a safe condition, the patient can check out from the hospital after completing the discharge and payment process.

P4: Recuperation and Travel

After the patient has checked out from the hospital, the recuperation and tourism depends on the MT's requirements and consideration, e.g. some tourist attractions may be inappropriate for the patient. This phase of the process includes a coordinator for managing the rehabilitation and tourism.

P5: Returning Home

After the fourth phase of the process has been completed, if the patient's illness and symptoms have not improved, he/she will go through the medical procedure again. If his/her conditions has improved, the physician will allow him/her to be discharged. Thereafter, the patient will set a return journey date and notify the hospital, which will facilitate the departure by sending the patient to the airport.

P6: Follow-up and CRM

When the MT arrives at their country of origin, the HOS will contact the patient in order to enquire about his/her symptoms after the period of treatment and recommend the hospital's promotions, such as new programs and other additional treatments that are offered. This is a part of the customer relationship management process.
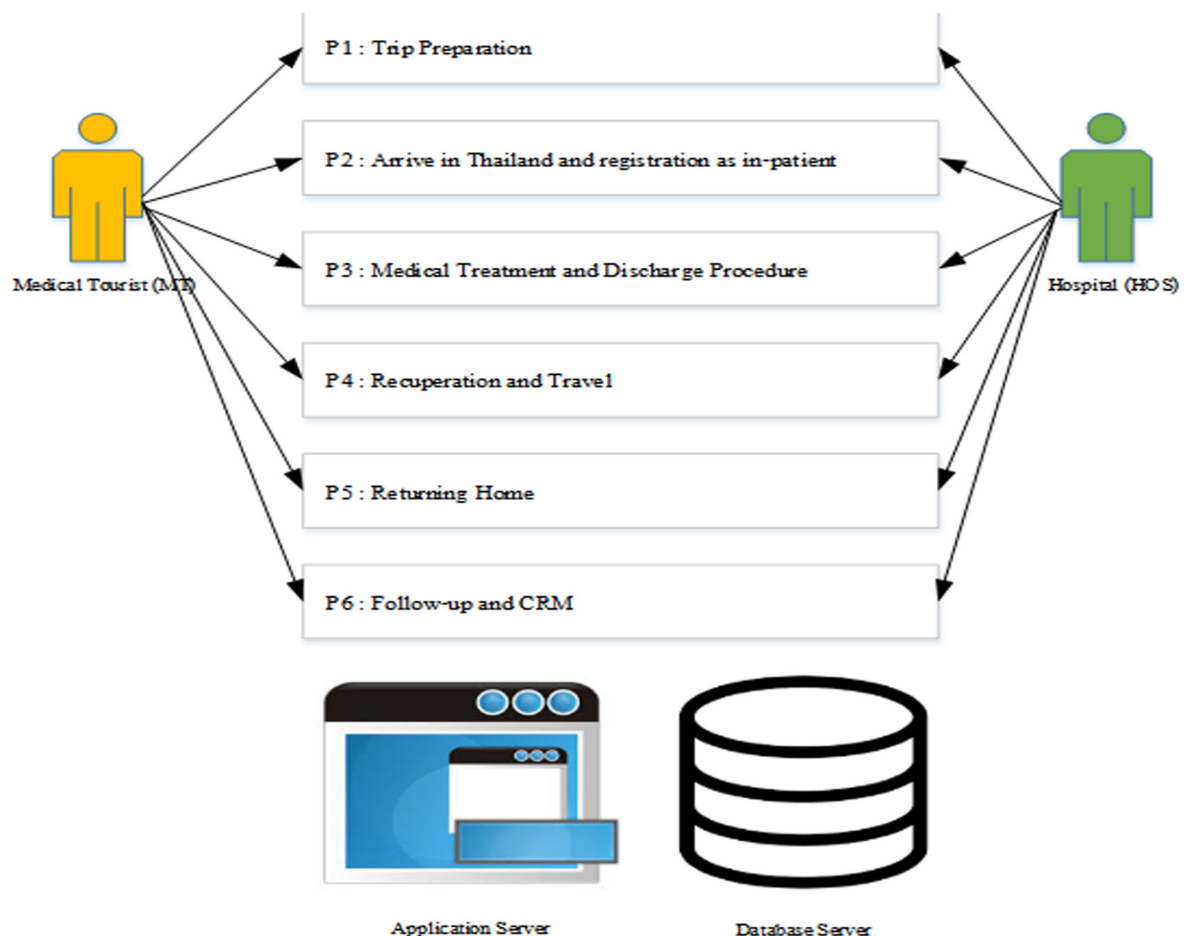

Figure 2 Structure of the MTP System

Based on the six phases of the process described above, the operational process needs to be developed as a Web-based Client Server, which has the Application Server and the Database Server, as shown in Figure 2.

The MTP software will be developed as a Web-based Application, which communicates by e-mail notifications within the system, e.g. the system will send notifications of the information to the MT. The application development will be designed and follow the operational process, which has two complementary parts, namely the medical tourist user and the hospital service provider user. Both will communicate with each other and co-ordinate in order to create the trip plan that includes the important milestones, the main activities, and the timetable and itinerary of the trip.

In the trip plan, there are a number of points called 'milestones', which are composed of the following:

1. Date of login and registration in the MTP

2. Date of request for the HOS proposal form

3. Date of accepting and confirming the proposal

4. Date of travel to Thailand/arrival in Thailand

5. Date of check-in at the hotel

6. Date of check-in as an in-patient

7. Date of the start of the medical treatment

8. Date of discharge

9. Date of check-in at the recuperation center/place

10. Date of check-out from the recuperation center/place

11. Date of returning home/to the country of origin

Moreover, the trip plan also follows the activities in order to access the milestones that are the main activities. All of these come from the MTP, which involves the MT or user and covers the entire process from the beginning to the return to their country of origin.

MTP Algorithm

The Medical Trip Planning structure covers the interaction between the MT and the HOS for the planning of the trip as well as the monitoring of the milestones and activities. The Interaction Algorithm shown in Figure 3 and the example seen in Figure 4 illustrate the medical tourist trip planning system, which is a travel plan that can monitor both the milestones and the activities that will occur during the medical trip.

Interaction MTP Algorithm
Steps for the Medical Tourist--MT

1. Log in to the MTP system.

2. Register in the MTP system.

3. Check the medical service options.

4. If the medical service is available, provide more information in order to request the estimated costs and treatment period.

5. Wait for the request to be fulfilled

6. Consider the primary request proposal.

7. Accept the primary request proposal.

8. Receive the final request proposal from the HOS.

9. Accept the final request proposal.

10. Prepare the visa and book the air tickets.

11. Provide additional information to the MTP, namely the flight number, the requested pick-up time at the airport, the list and number of relatives, the baggage allowance, the contact information during travel (messaging, WhatsApp, Line, etc. (and the relaxation break before the hospital admission.

12. Inform the HOS when departing from the country of origin.

13. Notify the HOS upon arrival at Suvarnabhumi Airport.

14. Receive confirmation from the HOS regarding pick-up at the airport.

15. Wait at the airport for the pick-up arranged by the HOS.

16. Receive notification from the HOS regarding check-in at the hospital for registration as an in-patient.

17. Receive information from the HOS about the hospital room number and other details.

18. Undergo the medical service procedure.

19. Having completed the procedure, prepare for discharge from the HOS.

20. Notify the HOS of the discharge date.

21. Make the payments.

22. In the case of not recuperating, prepare to depart to their country of origin and notify the HOS of the departure date.

23. In the case of recuperation, notify the HOS of the chosen tourist attraction.

- If there are any complications during the recovery period, notify the HOS.

- At the end of the rehab period, prepare to return to the country of origin.

24. Notify the HOS of his/her schedule (date, time, flight no., etc.)

Responsibilities of the Hospital Officer--HOS

1. After the HOS receives the request from the MT, the HOS prepares and sends an e-mail message about the tentative estimated costs and treatment time to the MT.

2. After receiving the complete information about the MT, the HOS prepares the documentation of the estimated costs and treatment time.

3. If there is not enough information, the HOS requests that the MT provides more information.

4. After the HOS receives the required information, it sends an e-mail message to the MT about the estimated costs.

5. After the HOS receives confirmation of the trip plan by e-mail from the MT, if more information is required, the hospital officer arranges the physicians' meeting for creating the medical treatment plan.

6. Then, the details of the medical trip plan, the estimated costs and the preparation checklists are sent back.

7. After the HOS receives the confirmation from the MT, the hospital officer notifies all of the related personnel and sets up the MTP in order to monitor all of the processes related to the following information:

- Date/time and flight no.
- Scheduled stay in Thailand

- Appointment date

- Details of the treatment procedure period

- Physicians

- Other checklists

8. The medical tourism coordinator prepares to welcome the MT.

- In the case of the MT checking in and being admitted directly to the hospital, the ambulance is sent to pick them up at the airport.

- In the case of the MT checking in at the hotel first, the hotel is contacted to arrange the pick-up at the airport, and the MT is notified.

9. The MT is registered as a patient and the room is arranged.

10. The HOS provides the treatment schedule details to the MT.

11. After the medical treatment, the HOS informs the patient to be ready for discharge and to make payments, and the HOS provides the medication details and the details of follow-up care after returning home.

12. It is arranged for the MT to travel to the rehabilitation point at tourist attractions, if included in the MTP.

13. The status of the MT patients is tracked throughout their stay in Thailand.

14. All parties concerned are notified when the patient is ready to return home.

15. The details of the care information and thank-you letters to the MT patients are sent by e-mail.

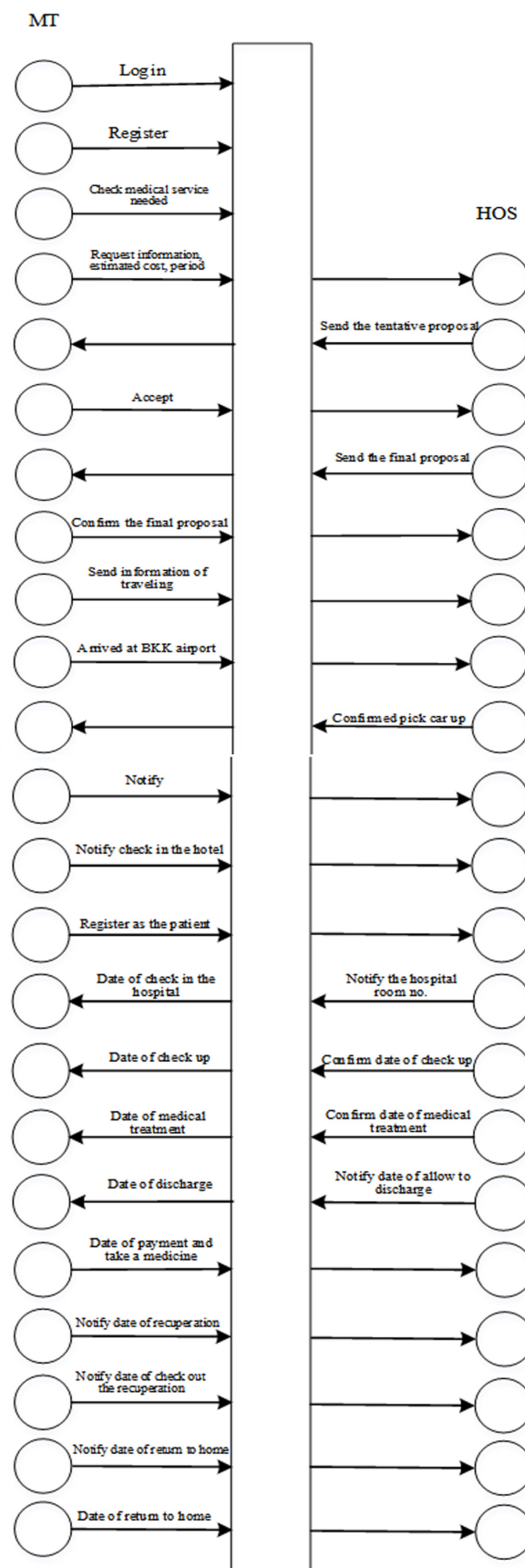16. E-mail is sent every 3 months to provide updates about the hospital's information, such as promotions.

Figure 3 Interactive MTP Algorithm between the MT and the HOS

General Hospital　　　　　　　　　**Medical Tourist Trip Planning**

Name: Mr. ANNVA VARUNA　　Age: 65:9:7	Nationality: Bruneian	
Medical Service: Dental Implant	Contact: Mrs. AISHA VARUNA	
Department: Dental	Tel: +6731234567	12345678
Physician: Dr.CHONTACHA HARNIRATISAI	e-mail: xyzvaruna@gmail.com	

M No.	Milestone / Activity	D/M/Y	Time	Details
M1	Login and Register the MTP			
	Register	12-Oct-2018	05.30 PM	
	Identify procedure needed	12-Oct-2018	05.45 PM	
	Input personal information	12-Oct-2018	05.50 PM	
M2	Request the proposal from the HOS			
	Input more information required	13-Oct-2018	02.15 PM	
M3	Accept and confirm the proposal			
	Book air ticket and notify to the MTP	14-Oct-2018	11.30 AM	Flight#TG4604 (2hr45min)
	Notify the number of relations	14-Oct-2018	11.40 AM	
	Book visa	14-Oct-2018	11.45 AM	Brueian allowed to stay in Thailand for 30 days
M4	Travel to Thailand			
	Notify boarding	18-Oct-2018	06.15 PM	
	Notify when they arrived at BKK airport	18-Oct-2018	08.00 PM	
	Get picked up by HOS's car	18-Oct-2018	08.40 PM	
M5	Check in at the hotel	18-Oct-2018	09.30 PM	AVANI Atrium Bangkok, Room#411
M6	Become the patient			
	Go to the hospital	19-Oct-2018	10.00 AM	
	Register as the patient	19-Oct-2018	10.30 AM	
M7	Start the medical procedure			
	Receive the medical procedure	28-Oct-2018	06.00 PM	
	Finish the medical procedure	Pending……	Pending……	
M8	Allow to discharge	Pending……	Pending……	
	Payment and receive medicine	Pending……	Pending……	
	Plan the schedule of resting place & notify to HOS	Pending……	Pending……	
	Discharge	Pending……	Pending……	
M9	Check in at the recuperation	Pending……	Pending……	Plan to Phuket 6 days
M9	Check in at the recuperation	Pending……	Pending……	Plan to Phuket 6 days
	Travel to recuperation destination	Pending……	Pending……	
	Notify to HOS	Pending……	Pending……	
	(Inform HOS if having any problems)	Pending……	Pending……	
M10	Check out at the recuperation	Pending……	Pending……	
	Notify to leave recuperation	Pending……	Pending……	
	Notify the flight departure for back destination	Pending……	Pending……	
	Notify boarding	Pending……	Pending……	
M11	Return to their home			
	Notify when they arrived at BWN airport	Pending……	Pending……	

Figure 4 Example of the medical tourist trip plan

Research Methodology

The researchers used an interview form, with a list of questions to collect the data in order to design and develop the MTP system by following the medical tourism process at Praram 9 Hospital. Before testing the MTP system for evaluation, the researchers tested the system with four international patient staff members. Then, a Likert scale survey form was used in order to evaluate the satisfaction regarding the system and the results were calculated with the Excel program.

Population and Sample of the Population

Due to the restrictions regarding access to the information of private patients, the population selected includes the target group who used the MTP system, namely a group of middle eastern medical tourists who are interested in receiving medical treatment procedures at Praram 9 Hospital. Each month, there are about 50 middle eastern medical tourists who are interested and make inquiries by contacting Praram 9 Hospital. The researchers used the sample calculation method of Yamane as follows:

$$n = \frac{50}{1+(50)(0.05)^2}$$

$$= \frac{50}{1.125}$$

$$= 44$$

N = Total number of population

e = Accuracy level or random error level

n = Number of sample population

System Implementation

The MTP system was implemented as the prototype on the Web-based Client-server and MySQL database, which includes the main functions as described in section describing the Interactive MTP Algorithm above, resulting in the medical trip planning for a journey to Thailand. The structure of the medical trip planning system shown in Figure 2 is based on the medical service procedure and the requirements of the medical tourists. The medical trip planning example is shown in Figure 4. The usage satisfaction and evaluation of the system are quite difficult to obtain because it is not possible to access the hospital's information system as it will interfere with the hospital's operational system. Moreover, it is not the hospital's policy to do so. Therefore, the questionnaires were used with the Middle Eastern patients who are interested in the medical tourism of Thailand and were selected as the sample population. The hospital's coordinator provided the information that there are approximately 120 Middle Easterners who contact the hospital per month, but only 50 have travelled as medical tourists. According to Yamane's principle (1967), approximately 50 of the Middle Eastern medical tourists were used as the population. For the Confidence Level of 95% and an 0.05 Margin of Error, the population sample of the medical tourists was 44 participants in total. The MTP was described and demonstrated to the sample population of users before they completed the questionnaires. The result was that 87% of the MTP system is considered to be greatly useful to the medical tourists. Moreover, the MTP system was found to effectively help with tracking all of the milestones and activities of the medical tourists.
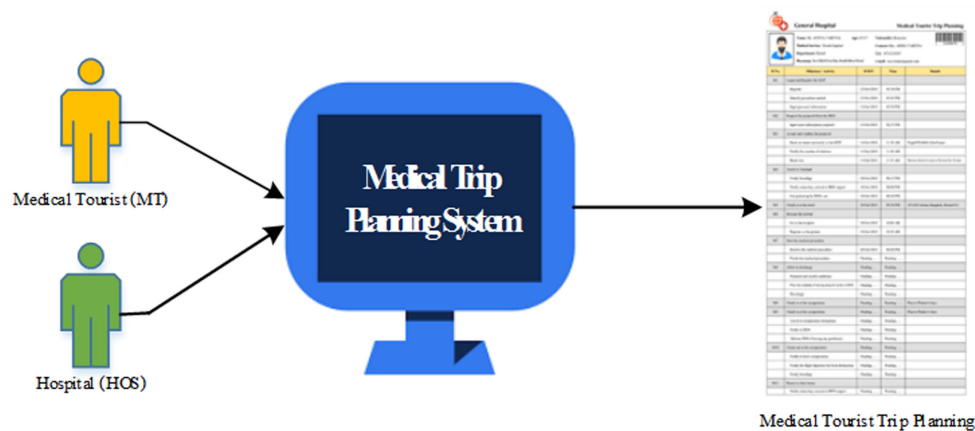
Figure 5 Interactive structure between the MT and the HOS on the MTP system by using the interactive MTP Algorithm

Results

The research on the Medical Trip Planning--MTP with Activity Tracking System System was aimed to design and develop the MTP planning system and evaluate the efficiency of and satisfaction towards the system. The literature revealed that there was no previous research that studied the development of the MTP system. Therefore, the researcher applied the medical value chain of Shanmugam (2013) as the framework. An interview form was used to collect the data on the services provided at Praram 9 Hospital. The installation of the MTP system by the hospital is not possible because of the limitations of their operations and policies and the fact that the health profiles of the patients are confidential. Therefore, the researchers developed the MTP system as a prototype and tested the system in order to collect the evaluation result regarding the level of efficiency and satisfaction with the system. The researchers conducted the questionnaire in two parts with 13 items, which can be summarized as follows in Table 1:

Table 1

The assessment results regarding efficiency and satisfaction

	Questions	Total Score	C.V.(%)	SD	Interpretation
	Part A: Efficiency and benefits of the system				
1	The usage menu is appropriate.	180	17.29	.71	Very Satisfactory
2	The system has a menu for understanding the information.	189	11.64	.50	Satisfactory
3	The processing of the system at each step is fast.	175	19.81	.79	Very Satisfactory
4	The system provides prompt responses.	197	12.71	.57	Very Satisfactory
5	The security of the information in the system is appropriate.	178	17.75	.72	Very Satisfactory
6	The system is user friendly.	172	19.43	.76	Very Satisfactory
7	The system facilitates faster usage.	199	11.89	.54	Very Satisfactory
8	The language used in the system is relevant and clear.	194	12.87	.57	Very Satisfactory
	Average	1,484	15.43	.64	Very Satisfactory
	Part B: Satisfaction with the system				
9	Did you enjoy your experience with the system?	210	14.45	.69	Very Satisfactory
10	Were you successful in using the system?	257	13.51	.79	Very Satisfactory
11	Were you able to control the system?	181	17.47	.72	Very Satisfactory
12	Is the information provided by the system clear?	188	16.07	.69	Very Satisfactory
13	Did you feel any discomfort while using the system?	186	14.89	.63	Very Satisfactory
	Average	1,022	15.27	.70	Very Satisfactory
	Overall average (Parts A+B)	2.506	15.35	.67	Very Satisfactory
	Overall rating score	2,860			
	%	87%			

Conclusions

Medical tourism is an important industry in Thailand. The process of the journey of medical tourists must be coordinated with the hospitals that provide the medical services at the destination and the related travel services. The medical trip planning system supports the coordination between the medical tourists and the hospitals systematically. It covers all the medical tourism processes such as the request for information, the planning of the trip, the welcome and facilities when a medical tourist arrives in Thailand, the registration as a patient, the medical treatment process, the discharge process, the recuperation period and returning home. The medical trip planning system is a tool that matches the process flow of the treatment and tourism of international patients. Several aspects of the medical trip planning information are in a state of continual change, e.g. the date of receiving the visa date or the discharge date, because the medical treatment schedule may be postponed depending on the specific situation. However, the MTP supports the medical tourists from the beginning until the end of their medical treatment trip. In addition, the medical provider can provide effective care to the medical tourists, from immediately following up closely upon their first contact until they return home. This system keeps track of and provides the necessary information for the medical tourists, which leaves a lasting good impression on them.

Discussion

The research results on the medical trip planning with activity tracking system: MTP System was classified into two areas. Firstly, regarding the efficiency and benefits of the system, the average SD was 15.43%. The satisfaction was found to be at the highest level. The developed system included an appropriate and simple menu, in which each process was quickly conducted. The access security was appropriate, and the language used was easily understood. Secondly, regarding the satisfaction towards the system, the average SD was 15.27%. The satisfaction was found to be at the highest level. The system users enjoyed using the system and were successful with regard to the system usage. Moreover, they were able to control the system use by themselves.

Suggestions

The security system for accessing the information of the users and the patients' health profiles is important because this information should remain confidential. Therefore, the security system for accessing data by the provider should employ the access controls and define the level of authorization in order to manage the profiles of the clients. For the users or medical tourists, the access to the system should include the OTP for enhanced personal security.

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