

THE INNOVATIVE PATIENT SERVICE DESIGN DEVELOPMENT: A CASE STUDY IN THE PREMIUM HEALTHCARE BUSINESS IN CHIANGRAI, THAILAND

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Abstract

The purpose of the study is to identify the innovative patient service design in the premium healthcare business. This study adopted a qualitative approach for the research process. The patient service touchpoints are perceived as the service encounter that can create service satisfaction during the customer journey. The semi-structured interview was conducted to collect data prior to the content analysis. The study was conducted with twenty-five informants from healthcare professional groups. They were doctors, nurses, and supported staff who worked in the premium healthcare business in Chiangrai, Thailand. This study only focuses on the patient in Out-Patient-Department (OPD). The results of the study indicated ten critical patients service touchpoints that healthcare service providers can create innovative service during the OPD patient journey. There were 1) Information transaction and doctor appointment or reservation 2) Front counter service and parking and patient pickup point 3) Medical record and registration encounter 4) Vital signs measurement and medical history taking 5) Medical service and diagnostic service encounter 6) A medical procedure or nursing procedures 7) Medical miscellaneous treatment service 8) Claim center service 9) Cashier and 10) Medical dispensing. The discussions, conclusions, and implications were also provided.

Keywords: innovative patient service design, patient service touchpoints, service design, premium healthcare business



Introduction

The healthcare and wellness business is prepared for an aging society, especially in Thailand. According to The Siam Commercial Bank Public Company Limited (2021), Thailand is now in a transition to totally become an aging society. The report is stated that any countries with more than ten percent of citizens who are sixty years old and above from the total number of citizens are considered to be turning into an aging society. Agreeing with Ketsara (2019) mentioned, the percentage of citizens who are sixty years old and above will exceed twenty percent of the overall citizens in Thailand. In addition, World Health Organization (2021) explained under the topic of aging and health as between 2015 and 2050, the proportion of the world's population over sixty years will nearly double from twelve to twenty-two percent. The pace of population aging is much faster than in the past. Then, all countries have to ensure that their health and social systems are satisfying the demand of demographic shift. Moreover, technology and medical development are also allowing longer lives to citizens while the birth rate falls gradually (Ketsara, 2019).

As Krungsri Research (2021) stated, since 2003, the successive Thai government has pursued the goal of establishing Thailand as the regional medical hub. It has been a major driver of the growth of the private healthcare business sector and the development of the medical tourism industry. Moreover, there has been increasing development in large private sector hospitals, specialist hospitals, medical centers, specialist diagnosis and treatment clinics, and care centers or care homes for the unwell and

the elderly. The government would continue to support the healthcare industry under a strategic plan to develop Thailand into a global medical and wellness center hub by 2026. Then, these businesses continue to grow at a healthy rate since the service providers are prepared to deliver high-quality care to the patients (Krungsri Research, 2021).

According to Chiangrai provincial development plan 2018 to 2022 (revised version in 2022) (Strategy and information for development division, 2022), the revision plan mentioned, Chiangrai has an opportunity to be medical tourism destination and also offer the new trend of special tourism groups such as health and wellness tourism, creative tourism, and eco-tourism. Moreover, the strength points of Chiangrai province also supported healthcare and wellness business such as the location as a hub of the Greater Mekong Subregion (GMS), variety of transportations, medical tourism resources, etc. In addition, more investments and new establishment of healthcare and wellness business both public and private organization. To secure increase the market shares and long-term growth, exiting healthcare businesses have been investing more to expand their premises and commercial network. Furthermore, some healthcare companies have been building new hospitals or clinics in regional centers, tourist destinations, and border regions to meet demand from neighboring countries, or even buying shares in other profitable hospital groups also (Prachachat.net, 2018).

Nevertheless, service quality and customer satisfaction are considered important factors of patient expectations.



The service quality in healthcare can be defined by customer perception, both public and private organizations try to develop the service quality of the business to gain more competitive advantages and more patients satisfaction (Rungroje, 2019). The service design concept was adopted in this study. It aims to identify innovative service design development during patients' journey for patient satisfaction development in healthcare businesses. Service design is a multidisciplinary concept. The definition of service design will not be explained by a single discipline (Stickdorn, Hormess, Lawrence & Schneider, 2018; Buchanan, 2001). However, it can be defined as the design that primarily considers all stakeholders' experience, not limited to service receivers and service providers. Service design is taking stakeholders relating along the whole service process into account. It is a stakeholders' collaboration into every step to generate an effective service design (Lin, M., Li, F. Y., & Ji, Z., 2020; Lu, P., Liao, H. T., & Lei, J., 2020). Service design has been continuously developing and attempting to serve the best experience to all individuals within the processes and it is apart from consumers (Skooldio, 2021). Service design is a flexible concept in applying the tools to a project's purposes. There are various tools available for service design while it is not necessary to strictly follow tools usage guidelines since it will contrast with service design principles that promote a variety of problem-solving and improving methods (Stickdorn & Schneider, 2014; Lin, et al., 2020). The various tools of service design tools are customer journey maps, stakeholder mapping, personas, service blueprint, service safari, shadowing,

contextual interview, mobile ethnography, expectation maps, idea generation, design scenarios, storyboards, agile development, service role play, customer lifecycle maps, and business model canvas, etc. (Stickdorn & Schneider, 2014). Especially, customer journey maps, it is the popular tool for service business design and development. It demonstrates consumer decision-making processes, including prior being the customer and becoming a customer, which the result will be brought to create and develop service design concepts (Stickdorn & Schneider, 2014; Lin, et al., 2020).

Consequently, this study aimed to identify the innovative patient service design development while patient service touchpoints are perceived as the impression encounter that can create service satisfaction. Then, this study was adopted customer journey maps as a service design tool to identify the innovative patient service design development during the customer journey in the premium healthcare business in Chiangrai, Thailand.

Research objectives

This research adopted a qualitative approach for the research process. The objective aims to identify the innovative patient service design in the premium healthcare business, in Chiangrai, Thailand. The study only focuses on the Out-Patient-Department (OPD) patients. A semi-structured interview was conducted to collect research data. The study was conducted with twenty-five informants from healthcare professional groups. They were doctors, nurses, and supported staff who worked in the premium healthcare business.



Research question

To achieve the objective of this research, the following research question was developed to address this research study of the premium healthcare business in Chiangrai, Thailand; “What are the innovative service design development for patients’ service journey map?”.

Literature review

Healthcare businesses in Thailand and Chiangrai province

According to the office of the permanent secretary ministry of public health (2017), Thailand offers more than 38,512 properties in the healthcare services business. There is thirty-five percent of state-funded public health centers, district public health offices, and community or general hospitals. While the remaining sixty-five percents were private businesses and ventures such as private clinics and hospitals. Then, the weakness of government healthcare providers would lead to an opportunity for private healthcare providers to improve, typically emphasizing the speed and convenience of services and supporting middle-class customers who have sufficient spending power to turn to private hospitals despite charging more than government hospitals for equivalent services (Krungsri Research, 2021). In addition, the expansion of the healthcare business has been driven by the rising patient demand from neighboring countries, agreeing with the number of health and wellness tourists have been rising steadily also (Krungsri Research, 2021; The Siam Commercial Bank

Public Company Limited, 2021). Furthermore, the Thai government also promotes Thailand as an international healthcare hub; this main strategy is aligned with rising interest worldwide in medical tourism and helps to attract more foreign patients. The policy of designating Thailand’s medical industry and medical hub status is regarded as a new S-curve industry. The Tourism Authority of Thailand (TAT) is promoting the country as the medical and wellness resort of the world. For business investors, the policy has offered a range of incentives such as a tax exemption to attract overseas investors. It included setting up facilities for the research and development of medical innovation and pharmaceutical products and services (Krungsri Research, 2021). All factors have stimulated the investment of healthcare investors in a variety of platforms of business, such as some large and dynamic operators have engaged in mergers and acquisitions. Even existing company, they try to open new hospitals or invest to extend their commercial networks in critical regional centers of Thailand (Krungsri Research, 2021; The Siam Commercial Bank Public Company Limited, 2021).

According to the revision report of Chiangrai provincial development plan from 2018 to 2022 (Strategy and information for development division, 2022) stated, Chiangrai have more opportunities to be medical tourism destination and also offer the new trend of special tourism groups such as health and wellness tourism, creative tourism, and eco-tourism. There were many strength points of the province that supported the healthcare and wellness business. For example, the location as a hub of the Greater Mekong Subregion



(GMS); a variety of transportations and logistic systems; medical tourism resources both of product and services; the related educational institutions etc. Thus, there were more investments and new establishment of healthcare and wellness businesses both public and private organizations in Chiangrai. In addition, to secure increase the market shares and long-term growth, exiting healthcare businesses have been investing more to expand their premises and commercial network. Moreover, some healthcare companies have been building new hospitals or clinics in regional centers, tourist destinations, and border regions to meet demand from neighboring countries, or even buying shares in other profitable hospital groups also (Prachachat.net, 2018).

Service design concept

Service Design is referred to as the design of primarily considers all stakeholders' experiences, which is not limited to service receivers and service providers. Service design is taking stakeholders who are relating along the whole service process into account. In addition, the service design concept is believed that a stakeholder collaboration within every step can generate an effective service design. Collaboration can bring pleasure to all, for example, producers, suppliers, distributors, and local people (Stickdorn, Hormess, Lawrence, and Schneider, 2018). The service design is interdisciplinary which combined different methods and tools. This new method or concept differs from the former, focusing on only one method or tool from a particular discipline. In addition, it is progressively developed; therefore, a common definition or clear

explanation has not been available. To provide a single definition will limit the evolution and development of service design concepts and ideas that are gradually growing throughout time (Stickdorn, et al., 2018). Agreeing with Buchanan, R., (2001), to settle service design definition into a specific field is obsolete and unacceptable since it does not conform to multidisciplinary concepts of service design. Then, service design requires multidisciplinary concepts; hence, the definition of service design will not be explained by a single discipline and the development of service design is related to several fields for different purposes (Buchanan, R., 2001: Lin, et al., 2020; Stickdorn, et al., 2018; TCDC, 2015). Hence, '*Service Design*' is a combination of service design for an organization developing directions that concerns all stakeholders such as staff or service providers, customers or service receivers, and other individuals or units relating to service processes (TCDC, 2014). From the above definitions defined, whether it is academic approach or agency approach, it concludes that service design is an integration of interdisciplinary aiming to solve the problems; to develop; to improve; and to create innovation by adding service value to the user as well as concerning to all people throughout the processes.

Service design processes and tools

The service design processes rise from a human-centered design concept aiming to solve users' problems by utilizing research and design competencies. Service design has been continuously developing, attempting to serve the best experience to all individuals within the



processes, apart from consumers (Skooldio, 2021). Thinking steps consist of 1) Empathize; it is about understanding users, consumers, and related stakeholders 2) Define; the problem must be clearly defined and identify what should be done to solve the problem 3) Ideate; there is brainstorming to discover the methods to solve an existing problem and 4) Prototype; it tests the prototype of problem-solving methods founded in the previous stage, such as solving plan, simulation situation, model prototype, service standard blueprint. In the last step, it is accurate situation testing and evaluating whether the prototype is effective and can solve an existing problem in a real situation. It will be developed to be more potential (TCDC, 2014; Skooldio, 2021). In addition, Stickdorn and Schneider (2014) mentioned five essential principles of service design, there are 1) *user-centered* service design should transfer experience regarding consumer perception 2) *co-creation*. A co-creation of stakeholders through the entire process enables various viewpoints reflection for solving the problems 3) *sequencing*, well design service will reveal the causes and effects of the performance to stakeholders at every step sequentially 4) *evidence*, the service designer must present an intangible service through the tangible physical product to create a touchable feeling even though it is untouchable and 5) *holistic viewpoint*, the service designer has been suggested not to consider only one part of a specific service process but rather to concern the whole environment relating to service design aiming to the highest effectiveness (Stickdorn & Schneider, 2014). While TCDC (2014) and Dusit Thani College (2020) stated that, service

design processes involved three steps; there were 1) Exploration; 2) Creation; and 3) Reflection and implementation. Nevertheless, thinking processes employed by TCDC have been developed from Double Diamond Model, which The British Design Council first initiated in 2005 (cited in TCDC, 2015). The model aims to explain attitudes and work processes that combine creative thinking and design process. Double Diamond Model is a mixture of four procedures which are 1) discover; gathering rich and adequate data for design processes, 2) define; analyzing and summarizing important issues, 3) develop; brainstorming all stakeholders to produce feasible concepts for solving, developing, and improving the problems as well as for meeting service design requirements, and 4) deliver; combining various ideas to create the best service design for the market (TCDC, 2015).

There are various tools available for service design development. Service expert designers advise selecting appropriate tools with design context and purposes, and the outcomes will be different in each project. It is not necessary to strictly follow tools usage guidelines since it will contrast with service design principles that promote a variety of problem-solving and improving methods. Service designers are flexible in applying any tools to a project's purposes (Stickdorn & Schneider, 2014). There were many tools for service design such as stakeholder mapping, personas, customer journey maps, service blueprint, service safari, shadowing, contextual interview, mobile ethnography, expectation maps, idea generation, design scenarios, storyboards, agile development, service role play, customer lifecycle maps, and



business model canvas (Stickdorn & Schneider, 2014; TCDC, 2015). Especially, customer journey maps are favorable. This offers a better understanding of consumers' behavior, viewpoints, and feeling experienced through touchpoints among service providers, service receivers, and an entire stakeholder. Customer journey maps demonstrate consumer decision-making processes, including prior being the customer and becoming a customer, which the result will be brought to create or to develop service design concepts. Customer journey maps also show reflections in a holistic picture at every service period since the details of pre-service, during service, and post-service are required (TCDC, 2015; Stickdorn & Schneider, 2014).

Research methodology and data collection scope

The study was considered qualitative research that used an in-depth interview technique to collect research. A qualitative approach has been used to obtain essential information and understand the actual context of the patient journey in the premium healthcare business. The semi-structured interview was conducted to collect data before the content analysis. This study was conducted with twenty-five informants from healthcare professional groups (see Table1). There were doctors, nurses, and supported staff who work in

the premium healthcare business in Chiangrai, Thailand. Nevertheless, this study only focuses on the patient in Out-Patient-Department (OPD). There were many sampling techniques which are based on non-probability samplings, such as purposive, convenience, quota, and snowball sampling techniques (Neuman, 2006). While purposive and snowball sampling was initially used to identify key informants in the premium healthcare business in Chiangrai, Thailand. The appropriate sample size for an in-depth interview was around fifteen to twenty-five informants or until the data reached the saturation point (Chareanporn, T., Mingmalairaks, P., & Kumsuprom, S., 2020; Creswell & Clark, 2011; Edmonds & Kennedy, 2017; Riley, 1995). Agreeing with Patton (2002) affirmed that there were no specific rules for deciding the sample size if the size could provide significant insights into research issues. In general, the sample size was often decided by resource constraints which depend on the cooperation of research informants or even their effort and contribution to the researcher. Then, the data analysis was done by analyzing each interview from observation notes and grouping the issues found by classifying them into different themes. The data analysis took the form of thematic analysis by using the constant comparative method to identify and refine new categories. In addition, the data validity was assured by comparing statements from the interviewees in the premium healthcare businesses with multiple data sources.

Table 1 Informants list from the premium healthcare professional group in Chiangrai, Thailand

Code	Position/ Title	Age	Type of Organization
PHP1	Doctor/ Management team	57	Premium public hospital
PHP2	Customer service manager	50	Premium public hospital
PHP3	Senior nurse / Assistant director	39	Premium public hospital
PHP4	Nurse	34	Premium public hospital
PHP5	Pharmacist	46	Premium private hospital
PHP6	Doctor	44	Premium private hospital
PHP7	Senior nurse / Claim service manager	42	Premium private hospital
PHP8	Doctor / Assistant director	51	Premium private hospital
PHP9	Senior nurse	42	Premium private hospital
PHP10	Customer service officer	33	Private healthcare business
PHP11	Senior doctor / Management team	57	Private healthcare business
PHP12	Pharmacist / Dispensing supervisor	48	Private healthcare business
PHP13	Laboratory investigation (Lab test) officer	38	Private healthcare business
PHP14	Doctor / Assistant director	57	Premium private hospital
PHP15	Senior nurse / OPD manager	50	Premium private hospital
PHP16	Nurse	36	Premium private hospital
PHP17	Senior nurse/ Head of nursing	54	Premium public hospital
PHP18	Doctor / Assistant director	61	Premium public hospital
PHP19	Customer assistant	30	Premium public hospital
PHP20	Customer service manager	46	Private healthcare business
PHP21	Senior doctor	60	Private healthcare business
PHP22	Doctor	36	Premium public hospital
PHP23	Customer service manager	40	Premium public hospital
PHP24	Pharmacist / Dispensing station manager	39	Premium public hospital
PHP25	Nurse / Customer service supervisor	37	Premium public hospital

Research findings

The results provide a rich summary of the variety of the patient journey in the premium healthcare business in Thailand. The twenty-five informants described ten critical patients' service touchpoints that premium healthcare service providers can create innovative service during the patient journey at Out-Patient-Department (OPD). There were 1) Information transaction and doctor appointment or reservation 2) Front counter service and parking and patient pickup point 3) Medical record and registration encounter 4) Vital signs measurement and medical history taking

5) Medical service and diagnostic service encounter 6) A medical procedure or nursing procedures 7) Medical miscellaneous treatment service 8) Claim center service 9) Cashier and 10) Medical dispensing. The patient's journey map also contained specific influencing service touchpoints that directly relate to patient satisfaction development. The premium healthcare professionals saw them as key patients service touchpoints that were found to innovate patient service design. There were 1) Information transactions and doctor appointments or reservations; it was seen as the first key patients' service touchpoints. They are related to the



information provided on healthcare business websites or social media platforms such as Facebook, Instagram, Twitter, YouTube. Most of the patients prefer to search basic information of premium healthcare business before making their decision such as products and services expenses, accurate information, or business staff reliability. In addition, service appointments or reservations are also included in the early step of patient service encounter. Both offline and online channels are offering to the patients to appoint the doctor or reserve a seat for the medical service queue. 2) Front counter service and parking and patient pickup point; it referred to the service encounter area when the patients arrive at healthcare such as the front desk counter, parking lot, and patient pickup point. They are concerned with greeting and hospitality service procedures, car parking and support facilities, and hospital porter assistance. 3) Medical record and registration encounter; Medical record and registration touchpoints had to be established to generate patient profiles and hospital numbers (HN). Furthermore, the initial history taking for new patients who never visited or used the healthcare business service before was necessary for this step. 4) Vital signs measurement and medical history taking; this touchpoint was including of the process of blood pressure, temperature, pulse, and respiration. Moreover, medical history taking step it was included in this period also. Because the healthcare professional has to identify a particular clinic or expert doctor for the patient's illness. Thus, these service touchpoints were important to consider as premium healthcare professionals mentioned. 5) Medical service and

diagnostic service encounter; with extensive experiences in the healthcare business, most healthcare professional informants pointed out that the medical service and diagnostic service encounter is one of the important patient service touchpoints. The friendliness of doctors during medical diagnostic service or consultation is really key touchpoint that can impress the patients. In addition, the warm ambient of premium healthcare property helps to increase patient satisfaction and patient loyalty also. 6) A medical procedure or nursing procedures; after medical service and doctor diagnostic process, the medical or nursing procedures are also identified as important service touchpoints in the premium healthcare business. There were the therapeutic, i.e., intended to treat, cure, or restore function or structure such as surgical and physical rehabilitation procedures for patients. 7) Medical miscellaneous treatment service; the miscellaneous treatment service is defined as the medical service such as x-ray, ultrasound, MRI scan (Magnetic Resonance Imaging), or CT scan (Computerized Tomography). In some patient cases, they have to use miscellaneous treatment services during their medical treatment process. In addition, updated technology or innovative machines will be one of the medical miscellaneous treatment service qualities that the patients looking for. 8) Claim center service; most of the informants mentioned that claim center service was a crucial service touchpoint of the patient experience. A lot of patients they concerned about health insurance and welfare benefit right identification accurately. In addition, accurate information on patient insurance and welfare benefit also impact the billing



system. Then, the confirmation procedures with the patient was a crucial step of premium healthcare service providers. 9) Cashier; it was the billing system that included an accurate number of expenses and a short period of time of cashier process were necessary for the customer in the premium healthcare business. And 10) Medical dispensing; it can have defined as medicine or drug receiving. The speed time of the service process in this period is essential. Most patients do not want to spend more time after experiencing all medical services processes in the premium healthcare business. Then, the accurate medicine and completed pharmacist suggestions could not be de-prioritized in patient service journeys, as vital informants mentioned in the interview session.

Conclusion and discussion

To fine out the result to answer the research question as “what are the innovative service the design development for patients’ service journey map in the premium healthcare business in Chiangrai, Thailand?”, the study adopted a service design concept approach to identify the patient’s service touchpoints that are perceived as the influencing service encounter of patient satisfaction first. This study focuses only on the patient journey of Out-Patient-Department (OPD). The twenty-five cases had strong service providers in the professional premium healthcare business in Chiangrai, Thailand. There were including of doctors, nurses, and supporting staff.

According to Thailand Creative and Design Center (TCDC) (2015) explained,

service designers have been suggested to add flexibility and variety to service design processes depending on business context, characters, duration, and existing resources. Then, this research was adopted the thinking processes employed by TCDC. The research conceptual framework has been developed from the Double Diamond Model, which the British Design Council first initiated in 2005. The Double Diamond model aims to explain attitudes and work processes that combine creative thinking and design process. It was included four phases. There were discovered, defined, developed, and delivered (TCDC, 2016). This study follows the model which is 1) discover phase; the researcher gathering information from premium healthcare professionals who experienced in OPD, and related documents then adequate data about for design processes, 2) define phase; after gaining more information from key informants and documents enough, the researcher analyzing and summarizing essential issues such as patient service touchpoints, patient journey, service design process, and current premium healthcare business situation in Chiangrai, Thailand, 3) develop phase; brainstorming to produce feasible concepts for developing the patient service touchpoints in the premium healthcare business to satisfy the patient experience which customer journey approach as well as for meeting service design development requirements, and 4) deliver phase; combining various ideas to create the suitable procedures guideline of innovative patient service design development for the healthcare professional entrepreneur, investor, or developers in the premium healthcare

business by using Chiangrai province as a case study.

From the results, the findings indicated that all premium healthcare businesses require patient service touchpoints development. Most of them try to identify service encounters and create products and services to serve or satisfy patient expectations and satisfaction. The findings could be identified ten critical patients' service touchpoints that healthcare service providers can create innovative service during the OPD patient journey. There were 1) Information transaction and doctor appointment or reservation 2) Front counter service and parking and patient pickup point 3) Medical record and registration encounter 4) Vital signs measurement and medical history taking 5) Medical service and diagnostic service encounter 6) A medical procedure or nursing procedures 7) Medical miscellaneous treatment service 8) Claim center service 9) Cashier and 10) Medical dispensing, which were repeated by more than one premium healthcare professionals from the case analysis. The healthcare professional service providers saw them as key patient service touchpoints that were found to innovate patient service design. In addition, each of these patient journey touchpoints also contained specific influencing service procedures that directly related to patient experiences and satisfaction development. As Stettler et al., (2018) highlighted the importance of services experiences in the service process is one of the most important components in service design.

Based on all service touchpoints from the patient journey map and the direction of the key service design innovation that

derived from patient demand and expectation which fulfill the service encounter, it is possible to form the innovative patient service design of opportunity points that the patient needs to carry out of premium healthcare business. The innovative patient service design from the service design approach is mainly based on the result of the service design process. It could be categorized the innovative patient service design development into patient service journey map as three periods. There were 1) Pre-medical service period, 2) In-medical service period, and 3) Post-medical service period. By analyzing the ten service encounters, patient service touchpoint innovation procedures were clearly investigated and developed. This is an innovative design of service procedures based on patient demand and expectation from a premium healthcare professional perspective. The details were as follows;

1) Innovative service design procedure in pre-medical service period; in terms of information transaction and doctor appointment or reservation, innovative service design of this touchpoint could be developed user-friendly website and use popular social media to the potential facilitated customer. As Yoopetch (2018) stated that, social media had a crucial influence on the service design in the various services industry, especially in the service business. In addition, the premium healthcare business should educate front counter or customer service staff to deliver crucial and essential information of products and services or pre-consultant the customers. Moreover, both offline and online platforms should be available channels that customers can make doctor appointments or reserve a seat for the medical service queue. Most



of the patients prefer to know the basic information of the premium healthcare business before making their own decision. Thus, accurate products and services information and services expenses and estimates were essential things to prepare. For front counter service and parking and patient pickup point, innovative service design procedures should deliver to all patients by premium healthcare staff such as hospital porter and assistant, hostess, or valet service staff. When the patients arrive at healthcare property such as the parking lot, patient pickup point, or front desk counter, all staff can create the first impression. The premium healthcare professionals can set a service guideline or services standard such as greeting conversation, warm welcome speech, assistance with attention procedures, etc. During medical records and registration encounters, it is an important touchpoint for the patient journey also. The effective communication and professional hospitality service procedures are the innovative service design of this touchpoint because the staff has to generate a patient profile, hospital number (HN), initial history taking for a new patient who never visits or uses the service of premium healthcare business before, and health insurance and welfare benefit right checking for all patients. In the period of vital signs measurement and medical history taking, the innovative service design of this touchpoint is providing well-educated service staff. The essential competencies were observant, medical services skillful, and great communication because staff had included in step of blood pressure, temperature, pulse, and respiration. Moreover, it also included medical history taking that healthcare

professional has to identify a special clinic or expert doctor for the patient illness.

2) Innovative service design procedure in in-medical service period; from the study result, there were the medical service and diagnostic service encounter, a medical procedure or nursing procedures, and medical miscellaneous treatment service were developed innovative service design touchpoints. With extensive experience in the healthcare business, most healthcare professional informants pointed out that the medical service and diagnostic service encounter is one of the important patient service touchpoint. The providing of great and warm ambient of doctor consultation and diagnostic service encounter is an innovative service design for premium healthcare business. The respectability and friendliness of doctors during medical diagnostic service and consultation are key patient expectations that lead to patient satisfaction and loyalty. After the medical service and doctor diagnostic process, medical or nursing procedures from the doctor or nurse could be identified as innovative service design opportunity touchpoint. The technical competences of healthcare professionals have been required for this touchpoint. In addition, the service mind procedures and service standards are patient anticipations. Then, all medical procedure service from doctor or nurse should be well established. Those activities were the therapeutic, i.e., intended to treat, cure, or restore function or structure such as surgical and physical rehabilitation procedures, etc. Furthermore, in terms of medical miscellaneous treatment service, it is one of the touchpoint service that can innovate service design for the patient in



the premium healthcare business also. The miscellaneous treatment service was the medical service such as x-ray, ultrasound, MRI scan (Magnetic Resonance Imaging), or CT scan (Computerized Tomography). In some patient cases, they have to use miscellaneous treatment services during their medical treatment process. The knowledgeable, competent, skillful, and concentrated with patients are identified as key innovative service design development for healthcare professionals. Furthermore, updated technology or innovative machines will be one of the medical miscellaneous treatment service quality that the patients looking for.

3) Innovative service design development in post-medical service period; from the finding, it was found that claim center service, cashier, and medical dispensing were the service touchpoints that got potential to develop in service design procedures. All crucial service touchpoints of patient journey required competence and well communication staff, and hospitality and service mind manner. The innovate service design development is exhaustively and completely performances because a lot of patients they concerned about health insurance and welfare benefit right identification accurately. Moreover, accurate information of patient insurance and welfare benefit also impact to billing system. Then, the confirmation procedures with patient was a crucial step of premium healthcare service providers. For cashier touchpoint; it was referred to the billing system that included of accurate number of expenses and short period of time of cashier process were necessary for patient in premium healthcare business. It was innovative

service design opportunity that premium healthcare business can initiate. While medical dispensing touchpoint required both accurate medicine and completed pharmacist suggestions and short time to waiting also. The speed of service time in the service process is also the focal point of the post-medical service period. In addition, Yoopetch (2010) suggested that to enhance innovation in services environment, the organization should increase the awareness of knowledge management, especially knowledge acquisition process to continuously improve the service development. Moreover, Lu, et al. (2020) mentioned, service design thinking has been increasing the attention and attraction for customer in healthcare business and creating a great potential in creating better. It is agreeing with Patricio, L., Sangiorgi, D., Mahr, D., Čaić, M., Kalantari, S., & Sundar, S. (2020) mentioned, service design can contribute to the evolution of healthcare service system and also focus on patient centered for service satisfaction purpose. Furthermore, Ponsignon, F., Smart, A., and Phillips, L. (2018) suggested the theoretical insight into service delivery system (SDS) design, the customer journey can use as a frame to explore dimensions of experience quality that inform design requirements. It can help healthcare professional service provider deliver experience quality to patients, especially in premium healthcare business.

Recommendations and future research

As patient service touchpoints are perceived as the service encounters that



can create service satisfaction during the customer journey, based on the service design approach, ten critical patient service touchpoints from the OPD patient journey map and the direction of the key service design innovation procedures that are derived from patient demand and expectations that fulfill the patient experiences were identified. It is possible to form an innovative patient service design with the opportunity points that the patient needs to carry out of the healthcare business. By analyzing these service encounters, patient service touchpoint innovation procedures were clearly investigated and developed to gain more patient service satisfaction and competitive advantages in the premium healthcare business. Nevertheless, further research should investigate more premium healthcare businesses property and apply a quantitative approach to increase the generalizability to reaffirm

the results of the study. Nevertheless, this study was exploratory research that aimed to identify the innovative patient service design development while patient service touchpoints are perceived as the impression encounter that can create service satisfaction. Then, this study adopted customer journey maps as a service design tool to identify the innovative patient service design development during the patient journey in the premium healthcare business in Chiangrai, Thailand. Furthermore, this study focuses only on the patient journey of Out-Patient-Department (OPD). They are limitations of the study. It was expected that this paper had the value that could provide an analysis of the crucial patient service touchpoints that adopted a service design approach to develop patient service encounters on patient journeys in the premium healthcare businesses in the future.

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