# MEDICAL RECORDS MANAGEMENT OF FOREIGN PATIENTS IN THAI BORDER HOSPITALS

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**ABSTRACT:**

**Background:** Thailand has become a destination for medical tourism for many people from ASEAN countries and elsewhere. Thailand's international borders are shared with Cambodia, Malaysia, Laos and Myanmar; consequently, people from these neighboring countries, many of whom are economic migrants, are treated in Thai hospitals. Their information may not be completely and accurately represented in these medical records and statistics.

**Methods:** Questionnaires were sent to 345 selected hospitals; including 30 general hospitals and 315 community hospitals. Data were collected from two staff members in participating general and community hospitals including the chief of medical records and the staff member responsible for medical information technology. The response rate of the questionnaires returned to the researcher was 56% and included 19 general hospitals and 175 community hospitals yielding, a total 194 participating hospitals. Respondents returned questionnaires to the researcher through the post. The data collected examined administration and management, problems that focused on medical records and medical information technology related to foreign patients.

**Results:** The study demonstrated that the primary problems with medical records for almost foreign patients from countries that border on Thailand included: a lack of a standard registration process, having incomplete data, poor communication, low language skills, inability to pay, and the absence of a foreigner medical records management policy.

**Conclusions:** The recommendations for developing and managing medical records are as follows: 1) Hospitals where there are many foreign patients should have a foreigner medical records management policy and a strategic plan to develop a medical records system, that includes a registration form (available in several languages), separate counter services, and a separate medical records collection zone. 2) All hospitals should have standard registration process that is supported by an appropriate and responsive computer program for foreign patients. 3) Border hospitals need to be prepared to serve people from other Asian countries. This service includes planning, organizing, directing, monitoring and evaluation control, healthcare worker allocation, budget, materials, and equipment. 4) Healthcare workers need to focus on gathering the patients' histories by asking for their actual name, surname, parent's names, occupation, address, telephone number, and identification number.

**Keywords:** Medical records management, Information technology, Foreign patients, Thai border hospitals

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## INTRODUCTION

During the past ten years Thailand has experienced a large increase in the numbers of foreign patients, both as medical tourists and economic migrant workers, along the country borders. Thailand's Department of Export Promotion, Ministry of Commerce, and the Ministry of Public Health reported that the treatment and healthcare received by foreign patients increased from 550,161 persons in 2001 to 1,373,807 persons in 2007. The foreign patients that are from South-East Asia represent 80 percent of all foreign patients including those from Japan and Indonesia [1]. Thailand has become a destination for tourist medicine for many persons from ASEAN countries, as well as from around the world. Thailand's country borders are shared with Cambodia, Malaysia, Laos and Myanmar, consequently people from these neighboring countries, many of whom are economic

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migrants, are treated in Thai hospitals and clinics in the border area. Their information may not be completely and accurately represented in these medical records and statistics. This study examines some of the factors that contribute to why their medical records are often inaccurate and incomplete. The current study examined the medical records for economic migrants, many of whom do not have a legal status in Thailand, and the majority of these persons are from Myanmar. Their socio-economic and health conditions place them in unique circumstances when compared to medical tourists who are more affluent and have more options available to them when seeking healthcare. Maintaining accurate and complete medical records documents provides the vital link between the individual patient, their personal identity, their individual medical records that includes their case history as a patient, and the healthcare provided. The medical data of nearly sixty four percent of general out-patients at Burapha University's health science center was found to be complete [2]. An out-patient record audit at Srinagarind Hospital reported that the overall quality of out-patient records in Srinagarind hospital was fair at 62.45 % [3]. The medical records for both legal and illegal foreign patients may have incomplete individual history medical record data when compared to those of Thai people. The primary reason for this is that most illegal migrants do not have an identification number or card number, so that healthcare workers cannot accurately register the person's name, surname, and address. Migrant workers often arrive as emergency cases such as giving birth, as a result of accidents and/or with prolonged conditions that need immediate intervention. Their employer may or may not accompany them. Also, note that many economic migrants are legally working in Thailand, but have similar challenges when seeking healthcare. Many other factors contribute to the lack of having complete and accurate medical records which includes the lack of language skills by both the patient and the healthcare workers, the patient may be afraid of hospital authorities and so forth. The patient's profile data may also be incomplete because the follow-up may not have taken place, there was no continuous care, problems with the referral system, and disease outbreaks. The research question being examined is: Are border hospitals prepared to receive and serve foreign patients that includes: providing special services, having healthcare staff with language skills other than Thai, effectively communication, gathering information, and management? Currently, electronic medical records are required in hospitals where they are transferring over to paperless technology for maintaining and managing medical records or electronic medical records (EMR). Previous studies in Thailand rarely focused on the documentation of foreign patient's medical records. The present study examined administration, problems, and developing medical records and medical information technology in 194 border hospitals.

## METHODOLOGY

In order to conduct this descriptive study samples were taken from Thailand's government hospitals in 30 border provinces. Hospitals were located in the following provinces: Chiang Rai, Chiang Mai, Mae Hong Son, Tak, Kanchanaburi, Ratchaburi, Phetchaburi, Prachuap Khiri Khan, Chumphon, Ranong, Phayao, Nan, Uttaradit, Phitsanulok, Nong Khai, Loei, Nakhon Phanom, Mukdahan, Amnat Charoen, Ubon Ratchathani, Sisaket, Surin, Buriram, Sa Kaeo, Chanthaburi, Trat, Songkhla, Narathiwat, Yala, and Satun. Questionnaires were sent to 345 selected hospitals from all 30 border provinces which are close to Myanmar, Laos, Cambodia, and Malaysia; including 30 general hospitals and 315 community hospitals. Data were collected from two staff who were working in general and community hospitals, including the chief of medical records and the staff person responsible for medical information technology. The questionnaires' response rate, returned to the researcher, was 56% and included 19 general hospitals (63.3%) and 175 community hospitals (55.6%) for a total of 194 participating hospitals. The questionnaire was reviewed for content validity by two medical records experts and the reliability test using alpha cronbach equaled 0.89, subsequently some questions were revised to complete the questionnaire before the data collection. The questionnaire consisted of closed and open-ended questions. The closed questions focused on hospital characteristics, management, and problems. Open-ended questions asked for more subjective responses regarding management, problems, and developments. The data collected examined administration and management issues, problems that focused on medical records and medical information technology related to foreign patients. The descriptive statistics, so obtained, included hospital characteristics, administrations, medical records problems, statistics and reports, and the health benefits scheme, all of which were measured using percentage. The present study was approved by the ethical committee of the Faculty of Social Sciences and Humanities, Mahidol University Institutional Review Board (IRB), code

**Table 1** Percentage of hospital characteristics recorded from 194 participating hospitals

| Hospital characteristics | General hospital (n=19) | Community hospitals (n=175) |
|---|---|---|
| | n (%) | n (%) |
| **Medical records collection** | | |
| Paper-medical records | 6(31.6) | 24(13.7) |
| Paper and electronic medical records (EMR) | 13(68.4) | 144(82.3) |
| Electronic medical records (EMR) | 0(0.0) | 7(4.0) |
| **Computer program for medical records** | | |
| HosXP (modify registry medical records program of Thailand) | 13(68.4) | 139(79.4) |
| Others | 6(31.6) | 36(20.6) |
| **Program problems** | | |
| Yes | 14(73.7) | 132(75.4) |
| No | 5(26.3) | 43(24.6) |
| **Translator** | | |
| Yes | 3(15.8) | 34(19.4) |
| No | 16(84.2) | 141(80.6) |
| **Data recorded by program (more than one answer)** | | |
| Name | 19(100.0) | 173(98.9) |
| Surname | 19(100.0) | 167(95.4) |
| Date of birth | 16(84.2) | 164(93.7) |
| Age | 19(100.0) | 166(94.9) |
| Marital status | 18(94.7) | 165(94.3) |
| Occupation | 19(100.0) | 158(90.3) |
| Religion | 17(89.5) | 156(89.1) |
| Race | 19(100.0) | 163(93.1) |
| Nationality | 17(89.5) | 166(94.9) |
| Address | 15(78.9) | 147(84.0) |
| Language | 16(84.2) | 132(75.4) |
| Drug allergy | 15(78.9) | 143(81.7) |
| Passport | 9(47.4) | 110(62.9) |
| Immigrant identification number | 15(78.9) | 125(71.4) |
| Photo identification card | 5(26.3) | 76(43.4) |
| Employer identification number | 7(36.8) | 83(47.4) |
| Employer information | 13(68.4) | 120(68.6) |

number 2014/119.2804. All participants were informed about the research purpose and gave their signed consent before answering the questionnaires. Respondents returned the completed questionnaires in a sealed envelope sent to the researcher through the Thai postal system.

## RESULTS

Patient samples in the study were returned from 90.2% of community hospitals and 9.8% of general hospitals. Most of the hospitals' medical records systems used both paper and electronic medical records. General hospitals and community hospitals used only paper-only medical records at 31.6% and 13.7%, respectively. The most widely used medical records program was HosXP, which is a modified registry medical records program from Thailand and was used in 68.4% of general hospitals and 79.4% of community hospitals. However, 73.7% of general hospitals and 75.4%, of community hospitals have difficulties with the program. The primary source for the majority of medical records came from the patient's profile register, which included the demographic data of the Thai patients, however some data from among foreign patients have few registration details such as a passport, a photo identification card, and/or the identification number of their employer. Immigrant identification numbers were available only in 78.9% of general hospitals and 71.4% of community hospitals. Most of hospitals did not have support translators helping to communicate with foreign patients, with the non-availability being around 84.2% in general hospitals and 80.6% in community hospitals (Table 1).

The study showed that most hospitals did not have a vision, a mission, and a strategic plan for managing foreign patient's medical records, with less than 50% of hospitals having these attributes for managing foreign patient's medical records. The percentage of community hospitals having a vision, mission, and a strategic plan was greater than in general hospitals. When organizing foreign patient

**Table 2** Percentage of administration for managing medical records of foreign patients

| Administration for managing foreign patient's medical records | General hospital (n=19) | Community hospitals (n=175) |
|---|---|---|
| | n (%) | n (%) |
| **Planning** | | |
| Vision and mission | 5(26.3) | 76(43.4) |
| Strategic planning | 6(31.6) | 86(49.1) |
| Goals and objectives | 7(36.8) | 91(52.0) |
| **Organization** | | |
| Structural administration | 8(42.1) | 120(68.6) |
| Chain of command and operation | 12(63.2) | 121(69.1) |
| Responsibility and duty prescription | 11(57.9) | 119(68.0) |
| Preparation of foreign patient medical records | 11(57.9) | 69(39.4) |
| Separation of service from general patients (special counter service) | 1(5.3) | 6(3.4) |
| Separation of collected medical records from general patients | 1(5.3) | 7(4.0) |
| Registration form available in a foreign language | 6(31.6) | 30(17.1) |
| Improved services system | 11(57.9) | 75(42.9) |
| Correct and complete database | 15(78.9) | 102(58.3) |
| Health workers prepared to improve language skills (English, Burmese) | 13(68.4) | 86(49.1) |
| Master plan for serving foreign patients | 6(31.6) | 29(16.6) |
| Provided financial support of medical records | 6(31.6) | 39(22.3) |
| Provided equipment and facility for medical records (finger-scan, photograph) | 13(68.4) | 105(60.0) |
| Improved office environment | 15(78.9) | 126(72.0) |
| Improved medical records' committee | 16(84.2) | 146(83.4) |
| Continuous meetings to address improving medical records | 15(78.9) | 146(83.4) |
| Reporting system for medical records' problems | 15(78.9) | 156(89.1) |
| Reflection system of patient needs | 11(57.9) | 140(80.0) |
| **Leading/directing** | | |
| Providing work incentives | 13(68.4) | 122(69.7) |
| Leadership development | 13(68.4) | 126(72.0) |
| Communication | 16(84.2) | 145(82.9) |
| Team work | 16(84.2) | 144(82.3) |
| **Controlling-monitoring and evaluation** | | |
| Evaluation | 12(63.2) | 135(77.1) |
| Justice evaluation | 12(63.2) | 144(82.3) |
| Monitoring | 11(57.9) | 138(78.9) |
| Internal controlling | 15(78.9) | 143(81.7) |
| Security system | 15(78.9) | 160(91.4) |

medical records, almost all hospitals did not separate services from general patients; such as special counter service, and separately collected medical records from general patients. Approximately 5% of general hospitals and 4% of community hospitals had separate services and separately collected medical records from general patients. Most hospitals did not provide a registration form in the patient's mother tongue, if they spoke a language other than Thai, consequently the form was not available in a foreign language. Foreign language registration form availability was 31.6% in general hospitals and 17.1% in community hospitals. Only 57.9% of general hospitals and 42.9% of community hospitals had an improved service system that was adapted to serve patients from other countries. The percentage of correct and complete databases in general hospitals was higher than in community hospitals at 78.9% and 58.3%, respectively. The percentage of health workers prepared to improve language skills in general hospitals was higher than community hospitals at 68.4% and 49.1%, respectively. Only 31.6% of general hospitals and 16.6% of community hospitals had a master plan for serving foreign patients. Both general hospitals and community hospitals similarly provided incentives for work practices, leadership development, and team work. Additionally, most hospitals have an evaluation process, as well as systems for monitoring, internal control, and security, but the percentage of community hospitals that had controlling, monitoring and evaluation was higher than in general hospitals (Table 2).

The study showed that general hospital

**Table 3** Percentage of problems with foreign patient medical records

| Problems | General hospitals | | | Communities hospitals | | |
|---|---|---|---|---|---|---|
| | Frequently | Occasionally | Rarely | Frequently | Occasionally | Rarely |
| | n(%) | n(%) | n(%) | n(%) | n(%) | n(%) |
| **Medical records** | | | | | | |
| Unknown identification number | 14(73.6) | 3(15.8) | 2(10.6) | 95(54.6) | 43(24.7) | 36(20.7) |
| Difficulty writing name, surname | 11(57.9) | 4(21.1) | 4(21.1) | 83(47.7) | 52(29.9) | 39(22.4) |
| Unknown address | 11(57.9) | 4(21.1) | 4(21.1) | 72(41.4) | 57(32.8) | 45(25.8) |
| Incomplete demographic data | 13(68.4) | 5(26.3) | 1(5.3) | 84(54.1) | 52(29.9) | 28(16.0) |
| Unsuitable registration program | 4(21.1) | 7(36.8) | 8(42.1) | 26(14.9) | 46(26.4) | 102(58.7) |
| Difficult searching for revisits | 8(42.1) | 7(36.8) | 4(21.1) | 56(32.1) | 42(24.1) | 76(43.8) |
| Miscommunication | 7(36.8) | 8(42.1) | 4(21.1) | 78(44.9) | 63(36.2) | 33(18.9) |
| Referal system | 3(16.7) | 9(50.0) | 6(33.3) | 41(23.8) | 65(37.8) | 66(38.4) |
| Computer sufficiency | 9(47.4) | 7(36.8) | 3(15.8) | 74(47.8) | 54(34.8) | 27(17.4) |
| Computer support EMR | 11(57.8) | 6(31.6) | 2(10.6) | 82(52.9) | 49(31.6) | 24(15.5) |
| Standard collection system | 12(63.2) | 6(31.6) | 1(5.3) | 102(65.8) | 31(20.0) | 22(14.2) |
| Security system | 14(73.7) | 2(10.5) | 3(15.8) | 102(65.8) | 32(20.6) | 21(13.6) |
| MIT network system | 1(5.3) | 6(31.6) | 12(63.1) | 36(23.4) | 45(29.2) | 73(47.4) |
| Backup and reuse of data | 9(47.4) | 7(36.8) | 3(15.8) | 88(56.8) | 41(26.5) | 26(16.7) |
| Health worker sufficiency for MIT | 5(26.3) | 10(52.6) | 4(21.1) | 53(34.2) | 65(41.9) | 37(23.9) |
| Health worker's knowledge of MIT | 6(31.6) | 8(42.1) | 5(26.3) | 35(22.6) | 80(51.6) | 40(25.8) |
| Health worker's cooperation, supporting EMR | 7(36.8) | 9(47.4) | 3(15.8) | 73(47.1) | 61(39.4) | 21(13.5) |
| Computer equipment and network | 11(57.8) | 4(21.1) | 4(21.1) | 74(47.8) | 56(36.1) | 25(16.1) |
| Improved health workers of MIT | 7(36.8) | 9(47.4) | 3(15.8) | 65(41.9) | 58(37.4) | 32(20.7) |
| Preparation of MIT for Asian Communities | 6(31.6) | 6(31.6) | 7(36.8) | 45(29.2) | 51(33.1) | 58(37.7) |
| **Statistics and report** | | | | | | |
| Correct statistics reporting | 3(18.7) | 7(43.8) | 6(37.5) | 52(29.9) | 74(42.5) | 48(27.6) |
| Complete statistics reporting | 5(31.3) | 6(37.5) | 5(31.3) | 51(29.5) | 73(42.2) | 49(28.3) |
| Data use | 3(18.7) | 9(56.3) | 4(25.0) | 41(23.6) | 62(35.6) | 71(40.8) |
| **Health insurance schemes** | | | | | | |
| Insurance company | 1(5.6) | 2(11.1) | 15(83.3) | 13(7.5) | 32(18.6) | 127(73.9) |
| Health insurance | 4(22.2) | 4(22.2) | 10(55.6) | 50(28.6) | 47(26.9) | 78(44.5) |
| Own payment | 5(27.8) | 8(44.4) | 5(27.8) | 77(44.0) | 47(26.9) | 51(29.1) |
| Partial payment | 6(35.2) | 6(35.3) | 5(29.4) | 69(39.9) | 47(27.2) | 57(32.9) |
| Non-payment | 7(41.2) | 5(29.4) | 5(29.4) | 53(30.8) | 50(29.1) | 69(40.1) |

frequently had problems with unknown identification numbers of foreign patients at a higher rate than in community hospitals. A majority of general hospitals frequently had problems with patients writing their name and surname, as well as providing complete demographic data at a higher rate than in community hospitals. Incomplete demographic data was a frequent problem in both general hospitals (68.4%) and community hospitals (54.1%). Difficulties in searching medical records for revisits were a frequent problem in both general hospitals (42.1%) and community hospitals (32.1%). Miscommunication was frequently a problem for 78 community hospitals (44.9%) where the registrations were incorrect. Approximately 35.4% of general hospitals and 19.5% of community hospitals had frequent problems with finger scans. The referral system to other hospitals has occasionally presented problems in both general hospitals (50%) and community hospitals (37.8%). Frequently problems occurred in the areas of computer sufficiency, computer support of electronic medical data, a standardised collection system, security systems, and in backing up and reusing data. When using medical information technology (MIT) both general hospitals and community hospitals occasionally had problems with inadequate numbers of health workers, as well as inadequate knowledge and support for EMR services. Both general hospitals (47.4%) and community hospitals (37.4%) occasionally had problems improving health worker's knowledge of medical information technology. Both general hospitals (31.6%) and community hospitals (33.1%) occasionally had problems preparing medical information technology for Asian communities. The areas of statistics and reporting in both general hospitals and community hospitals had occasionally

had problems with accuracy, completeness, and with data use. The results also showed that approximately 41.2% of general hospitals and 30.8% of community hospitals frequently had problems with nonpayment for health services (Table 3). An exploration of hospitals by region showed that border provinces, particularly those located in the Northeast of Thailand (Thai-Laos, Thai-Cambodia), had very frequent problems with unknown identification numbers of foreign patients, at a higher rate than in other regions. Border province hospitals located in the North of Thailand (Thai-Myanmar) had very frequent problems with miscommunication and the nonpayment of health services at a higher rate than in other regions. Border province hospitals located in the West of Thailand (Thai-Myanmar) had very frequent problems of unknown addresses at a higher rate than in other regions. Finally, border province hospitals located in the South of Thailand (Thai-Malaysia) had very frequent problems with difficulties in searching medical records for revisits at a higher rate than other regions.

## DISCUSSION AND CONCLUSION

The results regarding problems with management and direction developments found that the majority of hospitals did not have a specific policy that addressed foreign patient's medical records. Not all hospitals pay attention to foreign patient's medical records' management, because they are unconcerned about having incomplete data and it does not necessarily affect reimbursement. The primary limitation in serving foreign patients is that the policy and system management has not developed specifically to serve them as it has for Thai patients. Most hospitals have systems for evaluating, monitoring, internal and external controlling, and security for Thai patients. The hospital accreditation (HA) and National Health Security Office (NHSO) have management standards that include externally auditing medical records; including monitoring, evaluation, and controlling to assure that data is complete and accurate. Most hospitals did not conduct separate strategic planning for foreign patients and did not separate services from the general patient population, such as counter service and separately collected medical records from general patients. The common practice in hospitals is not to differentiate between foreign patients and Thai patients. Healthcare workers had problems identifying persons, particularly when some persons did not have an identification number, or a card which made acquiring their name and surname especially difficult in the cases of illegal migrants. Examples of the difficulties in acquiring information included: being unable to provide their parent's names; patients using another person's card; foreign patients' using their employer's address. Actually, foreign patient's addresses often changed which creates difficulties for healthcare workers when providing follow-up treatment or basic healthcare services. Often foreign patients are given a new hospital number (HN) on subsequent visits, because information provided on earlier visits were incomplete and it may not be available in the existing medical records. Registration programs did not make provisions for foreign patients. This reflects the importance in improving communication and language skills when gathering data from foreign patients. Also, foreign patients are expected to register using their passport numbers. Other types of identification cards for foreign patients, especially illegal migrants, do not have an identification number and need to register using the 13 digit identification number like Thai patients with differences in code patterns. There were problems for healthcare workers communicating with foreign patients as they had difficulty writing and spelling their name and surname, as well as providing their patient histories, and health information. Previous studies in Thailand found that completeness of the data with general out-patients was 63.8% at Burapha University's health science center [2]. An out-patient record audit conducted for Srinagarind Hospital reported that their overall quality of out-patient records was fair; at 62.4% [3]. Missing data included socio-economic indicators such as class (41%) and education (25%) [4]. Medical records in computers were sufficiently complete with regard to diagnoses (82% of all items recorded), prescriptions (100%), referrals (67%), but there was incomplete records of lifestyle data such as the smoking habits (52%) and alcohol consumption (38%) of patients [5].

The present study showed that general hospitals frequently had a problem with unknown identification numbers of foreign patients at a higher rate than in community hospitals. Immigrant identification numbers's use was only 78.9% in general hospitals and 71.4% in community hospitals. Illegal migrants in communities did not have a card, because they were not formally registration as working in Thailand. Not only did hospital staff have problems identifying persons, but also had difficulty accessing patients, communicating with them, receiving necessary information, providing emergency care, as well as general health care, and receiving payment. All of these challenges directly affected the quality of

healthcare provided [6, 7]. About 36.8% of general hospitals and 26.4% of community hospitals occasionally had a problem with unsuitable registration entries when using the healthcare computer program. The program only supports inputting the foreign patient's passport number, but persons with other identification cards need to be entered using the 13 digits as required for Thai patients and which have different code patterns for each hospital. The problem is that the differences in the pattern number cannot be used to search for old hospital numbers and is not linked to other hospitals' databases. Miscommunication has very frequently been a problem for 78 community hospitals (44.9%) where registrations were incorrect. Around 84.2% of general hospitals and 80.6% of community hospitals did not have a supporting translator available to help with communicating with foreign patients. The referral system to other hospitals has occasionally presented problems both in general hospitals (50%) and in community hospitals (37.8%). This can be explained in terms of how their electronic medical records systems, standard registration processes, and databases are incomplete; making it difficult to exchange information with other hospitals. There are frequent problems with computer sufficiency, computer support of electronic medical information, having a standardized data collection and/or security system, and with backup and reusing data. The statistics and reporting both in general hospitals and in community hospitals occasionally had problems being correct, complete, and with data use. The results also showed that approximately 41.2% of general hospitals and 30.8% of community hospitals frequently had problems with nonpayment for health services. Own payments have frequently been a problem for both general hospitals (27.8%) and community hospitals (44%). Migrant workers, on the whole, are economically disadvantaged and in many cases are not registered. The cost of health insurance would be problematic, consequently the Thai government's effort to encourage migrants to both register and use health insurance has not been successful. In order to have health insurance, a migrant worker would need to pay 1,600 Thai baht per year and 500 Thai baht for a health check-up. Some migrant's employers may pay for this health insurance. However, since economic migrants are in search of work, they often move and change locations in search of work and do not have a specific address for an extended period of time. The government has not made having health insurance and being given health check-up compulsory for legal migrants. Results showed that both general hospitals (31.6%) and community hospitals (33.1%) occasionally had problems preparing medical information technology for Asian communities. Most of the hospitals' medical records systems used both paper-medical records and electronic medical records. Many hospitals were in the transitional period from using paper medical records to using electronic medical records (EMR). Information technology (IT) systems that involve computerized physician order entries, automated dispensing, barcode medication administration, electronic medication reconciliation, and personal health records are important components to prevent medication errors, but developing such systems is costly [8]. Previous studies of people who worked in a community health center in Thailand found that influential factors in information technology acceptance and use are performance expectancy, effort expectancy, social influence and voluntariness. Health information technology use is predicated on previous information technology experiences, system use intent, and facilitating conditions [9]. The results found that the main factors for using and accepting healthcare technology was the social influence on behavioral intentions and the facilitating conditions in direct use behaviors [10, 11]. In Korea, electronic health record use in schools of medicine is 50% and in general hospitals is 35% [12]. Physicians use electronic health records only 45% of the time [13]. The primary advantages of using electronic health records are that they communicate and link data to continuous care, quality care, and payment control over time [14]. The disadvantages of using electronic health records are not only the additional work load, unfamiliarity, lack of incentives, unacceptability, and being unmanageable but also privacy, secrecy, quality, and finance [15, 16]. The limitations of the study were relying on a self-reported questionnaire, the response rate (56%), and missing data due to unanswered questions.

The following is a list of findings and recommendations for developing and managing medical records: 1) Hospitals, where are many foreign patients, should have a policy driver and a strategic plan to develop a medical records system that includes a registration form (available in several languages), separate counter services and a separate medical records collection zone. 2) All hospitals should have a standard registration process that is supported by an appropriate and responsive computer program. Recording the person's identity is basic to the registration process. Patients holding a valid passport number did not have problems. Patients whose legal status was questionable did not have an identification card and needed to provide

both a photo ID and a finger scan. Legal patients who have a work permit card or special cards, but not an identification number had variations in the number of digits in their registration numbers. 3) Border hospitals need to be prepared for serving persons from other Asian communities. This preparation includes planning, organizing, directing, system control, healthcare workers, budget, material, and equipment. For example, healthcare workers should be provided with basic courses in English, Burmese, Lao, and Cambodian languages and communication, as well as information technology. Hospitals need to have translators available to help communicate with foreign patients. The budget needs to include information technology systems, developing electronic medical records (EMR), and an accurate database. Patients 'databases need to be linked or networked with all hospitals throughout Thailand and/or international hospitals. 4) The majority of hospitals were found to have incomplete data, especially regarding the patient's profile, and, in particular the foreign patients' demographic data. Healthcare workers need to focus on gathering the patients' histories by asking for their name, surname, parent's names, occupation, address, and their telephone and identification numbers. Hospital should have audit of medical records and health information systems not only for Thai patients but also for foreign patients. However, in order to accurately collect data, the healthcare workers need to have good communication and documentation skills.

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