Information Use Behavior of Clinicians in Evidence-Based Medicine Process in Thailand□

Somrux Sahapong MA*, Lampang Manmart PhD*,
Dusadee Ayuvat PhD*, Somkiat Potisat MD**

□*Part of a thesis entitle: Role and competencies of medical information professionals in evidence-based medicine. PhD in Information Studies Program, Khon Kaen University, Thailand.*

** Department of Humanities & Social Sciences, Khon Kaen University, Khon Kaen, Thailand*
*** Department of Medical Service, Ministry of Public Health, Nonthaburi, Thailand*

Objective: *To investigate the information-use behavior of Thai clinicians in the evidence-based medicine (EBM) process.*
Material and Method: *Based on the survey research, 198 questionnaires were sent to EBM clinicians working in public hospitals in Thailand. The data were analyzed by mean, percentage, and factor analysis.*
Results: *One hundred and fifty-seven questionnaires (79.3%) were returned. The results revealed that 52.9% of the clinicians used EBM process in clinical practice at a high level and 41.4% at a moderate level. Most respondents (91.7%) used information for supporting their teaching and learning process as well as for professional self-development. About two-third used information for supporting their clinical decision. The types of information that the clinicians used in high percentage were research articles from medical journals (89.7%), systematic reviews (83.4%), textbooks, and reference books in the medical field (80.8%). The information resources that were often used including Internet resources (84.1%), hospital or medical school libraries (73.7%), expert consultation (59.8%), and the medical record unit (41.9%). Most of the respondents (89.7%) used PubMed, search engine (85.6%) and Cochrane Library (56.4%) as the tools for accessing information. Most respondents frequently had accessed to information 2-3 days a week and 93.7% of them preferred to access information resources via the Internet by themselves at their office or home. For searching strategies, most clinicians used key words (95%). In the present study, 20 variables were designed to test the factors correlated with the clinicians' information use. The results showed that the six variables (information use, EBM use, experience, organization, competency, and educational background) were significantly correlated with information used by clinicians in EBM process.*
Conclusion: *Most Thai clinicians in the present study used EBM process. They regularly searched information by themselves with simple strategy. The results of the present study could be used for planning to improve the quality of clinicians in EBM practice. Since information use is important in using EBM, all hospitals should have adequate facilities to provide medical information for clinical practice. Relevant data from the present study may be useful for planning the use of EBM process and to further researches.*

Keywords: *Evidence-based medicine, EBM, Medical information-seeking behavior, Clinician information use*

J Med Assoc Thai 2009; 92 (3): 435-41
Full text. e-Journal: *http://www.mat.or.th/journal*

Evidence-based medicine (EBM) has been defined as the conscious, explicit, and judicious use of current best evidence in making decisions about the care of individual patients[1]. The important steps of EBM practice include the patients' problem identification, searching and appraising the evidence, clinical application, and assessing the outcomes. In EBM process, clinicians in daily practice use the best available evidence and patient preference for their decision-making. The introduction of evidence-based medicine has improved the medical care, lessened

Correspondence to: Sahapong S, Division of Learning Resource Administration, Faculty of Medicine, Ramathibodi Hospital, Mahidol University, Bangkok 10400, Thailand. Phone: 0-2201-2339, Fax: 0-2354-7268

clinical malpractice, and protected the patient rights. It has been assigned to medical curriculum[2-9].

Since EBM involved in using the best current evidence literature to provide the best possible care for the patient, the lifelong learning becomes the prominent part in the EBM process. The lifelong learning is the clinicians' impetus to enrich their knowledge and proceed to the best clinical practice. To become a lifelong learner, the clinician should be competent in searching and using the best evidence from high-quality research resources. The common obstacles of using the EBM process are the time constraint, the ineffective accessible of information, clinician's attitude, and their skill on information technology[10-13]. Today, many clinicians are increasingly interested in the information technology and online searching devices[14-16].

EBM is now worldwide accepted for clinical practice. In Thailand, the interest in EBM has been continuously increasing since the last decade. It has been gradually embedded in medical education and transmitted into clinical practice[17]. Many practicing clinicians realize the benefits of using EBM process. In this aspect, information use behavior of the clinician is very important. In Thailand, a study regarding the clinician using EBM process and information use behavior is not yet available. Therefore, the main objective of the present study was to investigate the information use behavior of Thai clinicians in EBM process.

Material and Method

The present study was a survey research. The authors developed closed-end questionnaires from theories and related literatures in EBM process and information usage. The questionnaires comprised of six parts: demographic characteristics, use of EBM process, information usage, problems in information usage, attitude in information use and roles, and competencies of Thai medical information professionals (MIPs). In the present article, only the first three parts were presented.

Demographic characteristics included general profile, computers and Internet literacy, and online database literacy. The competency levels on computers and Internet literacy and online database literacy were graded into expert, good, fair, novice, and not used.

The use of EBM process involved into five steps: 1) Setting a clear and answerable clinical question, 2) Searching the relevant studies from the literature, 3) Performing the critical appraisal of the study, 4) Determining the application to the patient, and 5) Evaluating the result in the patient[18]. There were 23 questions in this part. (Step 1: one question, step 2: three questions, step 3: ten questions, Step 4: five questions and step 5: four questions). The respondents were asked to give their opinion on the frequency of performance (regularly, sometimes, rarely, and never). These variables were recoded via SPSS into low (24-38 points), moderate (39-53 points), and high (54-68 points) categories to facilitate the presentation of variable analysis.

The clinician's use of information in the EBM process included the frequency, objective, how to use, types of information, resources and tools, strategy in information searching, and factors evaluated with the information use of clinicians.

One hundred and ninety-eight questionnaires were distributed to the specific clinicians using EBM process in public hospitals in Thailand. The hospitals were divided into two groups: university and non-university hospitals. In the authors' opinion, the use of EBM process and supporting of IT infrastructure of these two groups might be different. These factors might have the effects on EBM usage.

The Statistical Package for the Social Sciences (SPSS), version 11.5 was used to analyze mean, standard deviation, percentage, and factor analysis.

Explanatory Factor Analysis (EFA) was used to extract the factors correlated with the clinician information use. EFA was used for a well-established multi-item instrument, simply to verify the scale's unidimensionality. Another example of preliminary evaluation applying EFA to a set of self-report instruments used the pervasiveness of the first factor to evaluate the possibility of same-method bias before testing hypotheses[19]. Less consequential purposes involved the use of EFA for a preliminary evaluation of variables. In other words, the EFA serves as a subsidiary role, merely helping in preparation for the hypothesis testing that is the central purpose of the present study.

Results

One hundred and fifty-seven of 198 questionnaires (79.3%) were returned. The results were as follows:

Demographic characteristics

General profile

The majority of the respondents were male (66.2%). The mean age was 44.8 years (SD = 7.5) with a

range of 28-59 years. The mean duration of experience in EBM was 8.1 years (SD = 5.2) with a range of 1-30 years. The highest educational background was diploma for special training, 3-5 years after Doctor of Medicine (MD) graduate, in 75.8%. Others were MD graduated. The experience and activities related to EBM were as follows: attended EBM were information searching training session (61.1%), performed the clinical research (45.2%), writing the literatures and textbooks (33.1%), and the member of EBM group (23.2%) The majority of the respondents worked in university hospitals (57.3%).

Computer and Internet literacy

Details of the computer and Internet literacy are shown in Table 1. In comparing the computer and Internet literacy of respondents working in university hospitals and those working in non-university hospitals, the authors found higher competency in the former group.

Online database literacy

Details of the online database literacy are shown in Table 2. Clinicians in university hospitals used PubMed (Clinical Queries, Cochrane Library, ACP Journal Club and EBM Journals Website more than non-university clinicians. For UpToDate information database, more use was observed in the non-university group.

The EBM process usage in clinical practice

In this part, the results from 23 questions were analyzed. For the setting of a clinical question, only 15.3% of clinicians did it regularly. Most of them (50.3%) formulated a clinical questions on some occasions. To search the relevant studies, most clinicians did it by themselves at the library and information service center. They also consulted other clinicians to find the answers. Some asked for assistance from a librarian or MIPs. Most clinicians critically appraised the evidence. In clinical practice besides clinical evidences, most clinicians also used other information for decision making.

For clinical application, most respondents often considered the acceptance of the patients and their cousins (37.0%), the expenditure of clinical practice (53.2%), the debate of stakeholder and society (25.8%), the result of the clinical practice (65.8%), and the expectation of the clinical practice (65.8%).

For the last step of EBM process (the evaluating of clinical practice), most respondents regularly used the result of clinical practice (63.5%), the patients satisfaction (49.0%), the satisfaction of their cousins (33.6%), and the method to improve the better clinical practice (52.3%).

The level of EBM usage of the clinicians in the present study is shown in Table 3. Only 5.7% was in low level. Most of them were in moderate to high level.

Table 1. Computer and internet literacy

Technology	University hospitals (percentage)					Non-university hospitals (percentage)				
	Expert	Good	Fair	Novice	Not use	Expert	Good	Fair	Novice	Not use
Computer literacy	15.6	50.0	30.0	2.2	2.2	13.4	50.7	32.8	3.1	0.0
Internet	15.6	48.9	31.1	2.2	2.2	19.4	44.8	31.3	4.5	0.0
Computer include Internet	17.8	50.0	27.8	2.2	2.2	14.9	46.3	32.8	6.0	0.0

Table 2. Online database literacy

Databases	University public hospitals (percentage)					Non-university public hospitals (percentage)				
	Expert	Good	Fair	Novice	Not use	Expert	Good	Fair	Novice	Not use
PubMed (Clinical Queries)	20.0	47.8	25.6	3.3	3.3	12.5	46.7	28.1	3.3	9.4
UpToDate	5.7	18.2	30.7	5.6	39.8	7.8	31.3	26.0	3.0	32.8
Cochrane Library	13.5	33.7	38.2	5.6	9.0	1.5	30.8	40.0	4.6	23.1
ACP Journal Club	8.0	12.5	30.7	7.9	40.9	0.0	12.5	29.7	4.7	53.1
EBM Journal Website	10.3	12.6	33.8	3.3	40.0	4.6	15.4	33.3	11.1	35.6

Table 3. Level of EBM usage of Thai clinicians

Levels of EBM usage	Percentage (n = 157)
Low level of EBM usage (24-38)	5.7
Moderate level of EBM usage (39-53)	41.4
High level of EBM usage (54-68)	52.9

The use of information in EBM process

The frequency of information use

Most clinicians used information 2-3 days per week (60.5%). Only 26.5% of clinicians used information every day.

The purposes of information use

Most respondents used information for supporting their teaching and learning processes (91.7%) as well as professional self development (89.8%) but 66.5% of them use information for supporting their clinical decision.

How to use information

Most respondents searched information by themselves (93.7%). Few asked for service from MIPs (11.6%). Most respondents performed information searching at their offices (87.8%) and at their homes (73.6%). About 50% used the facilities at the hospital library.

Types of information

Clinicians obtained many types of information such as research articles from medical journals (89.7%), systematic review (83.4%), and textbooks and reference books in the medical field (80.8%).

Resources/Tools for information search

The information resources that the most respondents often used were Internet resources (84.1%), hospital or medical school libraries (73.7%), the expert in clinical practice (59.8%), and the medical record unit (41.9%). For the tools used for accessing information, most respondents used PubMed (89.7%), search engine (85.6%), and Cochrane Library (56.4%) (Table 4).

Strategy in searching information

There were several strategic methods that clinicians used to search for information. More than 95% of the clinicians used keywords. Other strategies were Boolean operator (AND, OR, NOT) (76.4%), similar medical terms (75.8%), medical subject headings (MeSH) (72.6%), the clinical queries in PubMed (60.7%), and expert consultation (28.4%).

Factors correlated with the information use of clinicians

The factors correlated with the information usage were shown as the result from factor analysis. Related to the literature reviews and theories including the data collected from the respondents, the 20 variables were grouped and classified into four categories; demographic characteristics (6 variables), EBM process usage (4 variables), environment (3 variables) and information usage (5 variables). Twenty variables were analyzed by Principal Component Analysis. The result showed that the Kaiser-Meyer-Olkin (KMO) was 0.73. The Bartlett's test of Sphericity Chi-Square was 1168.394 (p-value < 0.000). For factor extraction, each variable was dependent because Total Variance Explained (Initial Eigenvalues) was < 1. There were six factors that reached significant level and Rotation Sums of Squared Loadings Cumulative was 63.7%. The rotation technique of the suitable variables used Orthogonal Rotation by Varimax method at 25 circles.

The present result showed that the determinant in Correlation Matrix was 8.77 (p-value $\geq$ 0.0001). The Multicollinearity Correlation was not high. The loading factor was 0.30. The component extraction was six factors comprising information usage, EBM usage, clinician experience, organization, competency, and educational background.

Discussion

The results of the present study revealed moderate to high levels of EBM usage by Thai clinicians for their patients' care, although not all steps of EBM process were performed. The present, results may not be applicable to all clinicians in Thailand, since the study population was specific to the public general hospital. However, there is a sign that the use of EBM in clinical practice is growing. Most respondents have some experiences in EBM process. At present many medical schools in Thailand have incorporated EBM into their curriculum[17]. Because of their many benefits, EBM practices are welcomed by most clinicians around the world.

The present study shows that most clinicians use information for 2-3 days per week. They search information by themselves at their offices and at home. Few respondents ask for service from librarians or

Table 4. Resources/Tools for information searching

Resources/Tools for information searching	Percentage of use (n = 157)			
	Most	Moderate	Seldom	Least
Resources for information searching				
Medical record unit	7.7	34.2	46.5	11.6
Laboratory	3.9	29.9	48.7	17.5
Museum	1.4	9.2	33.8	55.6
Library inside the hospital	19.2	54.5	19.2	3.1
Library outside the hospital	5.8	23.7	41.7	28.8
Foreign library	7.9	19.5	23.7	48.9
Patient's profile	9.9	33.1	37.1	19.9
Patient's cousin	3.3	25.8	44.4	26.5
Expert in clinical practice	7.2	52.6	31.6	9.6
The Internet	33.8	50.3	13.2	2.7
Tools for information searching				
PubMed	58.1	31.6	7.1	3.2
UpToDate	12.3	21.9	32.3	33.5
Ovid	16.8	28.4	36.0	23.8
Embase	5.2	9.6	43.9	41.3
Cochrane Library	14.7	41.7	30.8	12.8
ACP Journal Club	5.2	18.7	38.7	37.4
OPAC (Online Public Access Catalog) of the library inside the hospital or medical school	5.3	14.5	34.8	45.4
CD-Rom	3.2	25.2	38.7	32.9
Search engine	30.5	35.1	22.1	12.3
Index database	5.9	24.2	39.2	30.7
Bibliographic database	3.9	19.6	42.5	34.0

MIPs. These indicate that Thai clinicians are confident in using information. The other possibility is that they do not know about the relevant services available.

Most clinicians use information searched for teaching and learning as well as for professional self-development. Two-third of clinicians uses it to make clinical decisions. These patterns are similar to many studies. Recent review of the evidence on the information seeking behavior of clinicians shows that most individual clinicians' needs are related to their clinical practices[20].

The present study revealed that most respondents used the Internet as the information resource in EBM process, which is similar to many studies[21,22]. PubMed was the most used tool by Thai clinicians. The study of Ajuwon[21] in Nigerian physicians also has similar findings. PubMed is the well-known free health science bibliographic database and the best cross linkage to other databases. The information obtained from literature searches in PubMed has a significant impact on patient care and clinical outcomes[23]. Although this database is useful for clinical evidence and is widely used by most respondents in the present study, it does not include all the relevant and useful information. Many medical libraries have subscribed other databases such as Cochrane Library, UpToDate, and Ovid etc. to support the EBM process. Thai clinicians should learn to use all available databases to obtain the benefit from them and perform the synergy to retrieve the best evidence.

The results of the present study revealed that most clinicians used research articles from medical journals and systematic reviews. They should have more knowledge on other resources and expertise to search for the relevant articles effectively. Previous study found that one of a major obstacle for most physicians in an optimal strategy to search information in databases[24]. For systematic review searching, the searcher needs to be an expert and understands about data structure and functions of bibliographic and specialized databases as well as technical knowledge and methodology[25].

The other major obstacle to EBM practice is time constraint especially in less developed countries

where clinicians are usually busy with their patients' care. Some clinicians are reluctant to use EBM. Proper training, easy to use strategy, or personal assistance may help clinicians to practice EBM more effectively[13,20].

In conclusion, most Thai clinicians in the present study use the EBM process in their daily practice. Although they have good knowledge and can search information by themselves, they may still need some advice and assistance. The knowledge of how to use online database and an effective searching strategy are essential. Despite their busy work, most clinicians should welcome some assistance. In this aspect, capable librarians, MIPs or other related personnel would be helpful. There are several kinds of work that these personnel can play significant roles in EBM process such as setting up supporting facilities, updating databases and resources, developing the search tool, giving advice or teaching search strategies or other relevant knowledge, searching information, and assisting in the appraisal of evidence. Therefore, the collaboration between clinicians and librarians should be closer.

References

1. Sackett DL, Rosenberg WM, Gray JA, Haynes RB, Richardson WS. Evidence based medicine: what it is and what it isn't. BMJ 1996; 312: 71-2.
2. Alberts MJ, Easton JD. Stroke Best Practices: a team approach to evidence-based care. J Natl Med Assoc 2004; 96: 5S-20S.
3. Coleman AL, Singh K, Wilson R, Cioffi GA, Friedman DS, Weinreb RN. Applying an evidence-based approach to the management of patients with ocular hypertension: evaluating and synthesizing published evidence. Am J Ophthalmol 2004; 138: S3-10.
4. Dorsch JL, Aiyer MK, Meyer LE. Impact of an evidence-based medicine curriculum on medical students' attitudes and skills. J Med Libr Assoc 2004; 92: 397-406.
5. Finkel ML, Brown HA, Gerber LM, Supino PG. Teaching evidence-based medicine to medical students. Med Teach 2003; 25: 202-4.
6. Lewis SJ, Orland BI. The importance and impact of evidence-based medicine. J Manag Care Pharm 2004; 10 (5 Suppl A): S3-5.
7. Lucas BP, Evans AT, Reilly BM, Khodakov YV, Perumal K, Rohr LG, et al. The impact of evidence on physicians' inpatient treatment decisions. J Gen Intern Med 2004; 19: 402-9.
8. McDonagh RJ, Hurwitz B. Lying in the bed we've made: reflection on some unintended consequences of clinical practice guidelines in the courts. J Obstet Gynaecol Can 2003; 25: 139-43.
9. Rosoff AJ. Evidence-based medicine and the law: the courts confront clinical practice guidelines. J Health Polit Policy Law 2001; 26: 327-68.
10. Andrews JE, Pearce KA, Ireson C, Love MM. Information-seeking behaviors of practitioners in a primary care practice-based research network (PBRN). J Med Libr Assoc 2005; 93: 206-12.
11. Davidoff F, Florance V. The informationist: a new health profession? Ann Intern Med 2000; 132: 996-8.
12. Boissin FG. Information-seeking behaviour and use of the Internet by French general practitioners: a qualitative study. Health Info Libr J 2005; 22: 173-81.
13. Lappa E. Undertaking an information-needs analysis of the emergency-care physician to inform the role of the clinical librarian: a Greek perspective. Health Info Libr J 2005; 22: 124-32.
14. Magrabi F, Coiera EW, Westbrook JI, Gosling AS, Vickland V. General practitioners' use of online evidence during consultations. Int J Med Inform 2005; 74: 1-12.
15. Magrabi F, Westbrook JI, Coiera EW, Gosling AS. Clinicians' assessments of the usefulness of online evidence to answer clinical questions. Stud Health Technol Inform 2004; 107: 297-300.
16. Westbrook JI, Gosling AS, Coiera EW. The impact of an online evidence system on confidence in decision making in a controlled setting. Med Decis Making 2005; 25: 178-85.
17. Wanvarie S, Sathapatayavongs B, Sirinavin S, Ingsathit A, Ungkanont A, Sirinan C. Evidence-based medicine in clinical curriculum. Ann Acad Med Singapore 2006; 35: 615-8.
18. Sackett DL. Evidence-based medicine: how to practice and teach EBM. 2nd ed. Edinburgh: Churchill Livingstone; 2000.
19. Tinsley C. Models of conflict resolution in Japanese, German, and American cultures. J Appl Psychol 1998; 83: 316-23.
20. Davies K. The information-seeking behaviour of doctors: a review of the evidence. Health Info Libr J 2007; 24: 78-94.
21. Ajuwon GA. Use of the Internet for health information by physicians for patient care in a teaching hospital in Ibadan, Nigeria. Biomed Digit

Libr 2006; 3: 12.
22. Carney PA, Poor DA, Schifferdecker KE, Gephart DS, Brooks WB, Nierenberg DW. Computer use among community-based primary care physician preceptors. Acad Med 2004; 79: 580-90.
23. Crowley SD, Owens TA, Schardt CM, Wardell SI, Peterson J, Garrison S, et al. A Web-based compendium of clinical questions and medical evidence to educate internal medicine residents. Acad Med 2003; 78: 270-4.
24. Schaafsma F, Hulshof C, de Boer A, van Dijk F. Effectiveness and efficiency of a literature search strategy to answer questions on the etiology of occupational diseases: a controlled trial. Int Arch Occup Environ Health 2007; 80: 239-47.
25. McGowan J, Sampson M. Systematic reviews need systematic searchers. J Med Libr Assoc 2005; 93: 74-80.

พฤติกรรมการใช้สารสนเทศของแพทย์ในกระบวนการเวชปฏิบัติเชิงประจักษ์ในประเทศไทย

สมรักษ์ สหพงศ์, ลำปาง แม่นมาตย์, ดุษฎี อายุวัฒน์, สมเกียรติ โพธิสัตย์

วัตถุประสงค์*: เพื่อศึกษาพฤติกรรมการใช้สารสนเทศของแพทย์ที่ใช้เวชปฏิบัติเชิงประจักษ์ (EBM) ในประเทศไทย*
วัสดุและวิธีการ*: ทำการศึกษาในกลุ่มแพทย์ที่ปฏิบัติงานในโรงพยาบาลของรัฐที่เป็นมหาวิทยาลัยและไม่เป็นมหาวิทยาลัย จำนวน 198 คน โดยวิธีการสำรวจ ทำการวิเคราะห์ข้อมูลโดยสถิติเชิงพรรณนาและการวิเคราะห์ตัวแปร*
ผลการศึกษา*: มีผู้ตอบแบบสอบถาม 157 คน (ร้อยละ 79.3) ส่วนใหญ่ใช้ EBM ในเวชปฏิบัติในระดับสูง (ร้อยละ 52.9) และปานกลาง (ร้อยละ 41.1) กว่าร้อยละ 90 หาสารสนเทศเพื่อสนับสนุนการเรียนการสอนและการพัฒนาตนเอง ประมาณ 2 ใน 3 ใช้สารสนเทศในการตัดสินทางคลินิก รูปแบบของสารสนเทศที่แพทย์ใช้มาก คือ ผลงานวิจัยจากวารสารการแพทย์ ร้อยละ 89.7 การทบทวนอย่างเป็นระบบ (systematic review) ร้อยละ 83.4 ตำราและหนังสืออ้างอิง ร้อยละ 80.8 สำหรับแหล่งที่มาของข้อมูลสารสนเทศ ได้แก่ อินเตอร์เน็ต (ร้อยละ 84.1) ห้องสมุด (ร้อยละ 73.7) การปรึกษาผู้เชี่ยวชาญ (ร้อยละ 59.8) และเวชระเบียน (ร้อยละ 41.9) แพทย์ส่วนใหญ่ใช้ PubMed (ร้อยละ 89.7) Search Engine ต่าง ๆ (ร้อยละ 85.6) และ Cochrane Library (ร้อยละ 56.4) ส่วนมากใช้เวลาในการค้นหาข้อมูลสารสนเทศ 2 ถึง 3 วัน ในหนึ่งสัปดาห์ และมักจะค้นหาเองจากอินเตอร์เน็ตที่ทำงานหรือที่บ้าน ส่วนกลยุทธ์ในการสืบค้นข้อมูล แพทย์ส่วนมากใช้คำสำคัญหรือคำหลัก ในการศึกษานี้ในการนำตัวแปร 20 ตัว มาทดสอบหาปัจจัยที่มีความสัมพันธ์กับการใช้สารสนเทศของแพทย์ ซึ่งพบว่ามี 6 ปัจจัยที่มีความสัมพันธ์กับการใช้สารสนเทศของแพทย์ในกระบวนการ EBM ได้แก่ การใช้สารสนเทศ การใช้ EBM ประสบการณ์ สภาพแวดล้อมขององค์กร ความรู้ความสามารถ และระดับการศึกษา*
สรุป*: แพทย์ส่วนใหญ่ใช้ EBM และเห็นความสำคัญของการใช้สารสนเทศ ส่วนใหญ่สืบค้นสารสนเทศด้วยวิธีธรรมดา ข้อมูลจากการศึกษาจะใช้ในการวางแผนเพื่อพัฒนาคุณภาพของแพทย์ EBM ทุกโรงพยาบาลควรมีการจัดหาสิ่งอำนวยความสะดวกในการใช้สารสนเทศที่มีประสิทธิภาพ ผลจากการศึกษาครั้งนี้จะมีประโยชน์สำหรับการวางแผนในการ พัฒนาการใช้ EBM ในประเทศไทยต่อไป*