

# Nursing informatics: improving nursing in Thailand

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**Abstract:** Nursing informatics is a nursing specialty that integrates the knowledge of nursing science and information science to increase the efficiency of nursing information management in every area: nursing practice, administration, education, and research. The implications of nursing informatics are limited to the developed country, but also be applied in the developing country, Thailand as well. Thai nurses should prepare ourselves for the information age by collecting nursing data/information and translating it into nursing knowledge. Offering nursing informatics courses at every level of nursing curricular is the way to prepare nurses in this information age. Rama Nurs J 1999; 5(3) : 263-72.

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## Introduction

Nursing informatics involves information management in nursing education, nursing administration and other information that nurses use to make decisions in nursing practice. This article addresses how to

implement this specialty in the developing country of Thailand. Thailand has a different health care delivery system from the United States and has some economic limitations in the use of information technology in the practice of nursing

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informatics. The implementation of nursing informatics can be used to increase the efficiency of information management. If existing information technology can be leveraged by educated nurses to increase the efficiency of nursing information management, then many areas including nursing practice, nursing research, and nursing administration will become more efficient and effective.

The purpose of this article is to disseminate knowledge in nursing Informatics to nurses in Thailand, analyze the use of nursing informatics, and suggest how to prepare nurses in Thailand to use information more efficiently to improve the nursing profession.

### **The Situation of Nursing Informatics in Thailand.**

Nursing informatics is a new nursing focus in Thailand. There is one nursing school that has offered an informatics course as an elective course for graduate students. The First National Conference on Nursing Informatics was held in February 1999. The Forum was funded by WHO in collaboration with The Nurses' Association of Thailand, and the technical

support by the International Council for Nurses (ICN). There were 214 nurses in attendance at the conference. The theme was "The Essence and Development of Nursing Informatics". The objectives of the conference were to exchange knowledge on the development of nursing informatics and to validate the International Classification for Nursing Practice (ICNP) nursing phenomena/problem list which has been developed by the International Council for Nurses. This meeting resulted 92 participants volunteering to validate the new list to add into the ICNP Thai version and established the Nursing Informatics Society of Thailand with 120 members.

### **The Implications for Nursing Informatics in Thailand**

#### **• Nursing Education**

Presently, nursing education is under the responsibility of nursing education institutes belonging to the Ministry of Public Health, University Affairs, and the Ministry of Defense. There are various baccalaureate degree programs, such as four-year Bachelor's degree program in nursing science, and 1-year or 2-year programs for continuing education for

professional nurses holding associate degrees or certificates in nursing.

Nursing education institutes under University Affairs also offer nursing education both in Master's degrees and Doctoral levels <sup>1</sup>. The Thai Nursing Council takes responsibility in evaluating the quality of nursing educational institutes and nursing curricula. The quality varies according to the student to nursing educator ratio and the facilities that are available (e.g. library, nursing lab, and computers). Nursing education institutes in University Affairs have more facilities than institutes in the Ministry of Public Health. Therefore, if each institute shares resources, it will result in better quality and increase standardization of nursing education.

The program for the Doctor of Nursing Science degree was established by the collaboration of four nursing institutes in different parts of Thailand because there was (and is) a limitation in the number of doctoral prepared nursing educators. Therefore, pooling all human resources from many institutes is essential in Thai nursing education. From the current nursing education situation in Thailand, nursing

informatics can assist in increasing the collaboration among institutes.

Presently, every nursing schools in Thailand have been fully or partially equipped with computer aid for teaching and learning purposes. Several nursing schools work collaboratively to produce Computer-Assisted Instruction (CAI) for self-study of the Thai student nurses. Currently, there is a trend that nursing Informatics or computer and nursing have been introduced into schools of nursing both at graduate and undergraduate level.

Informatics nurses have a strong background in information and computer technologies and understand the context of nursing science, so informatics nurses can improve Thai nursing education in many ways. With the knowledge in technology, informatics nurses can collaborate with other nurse educators in developing computer-assisted instruction and WebCT to provide nursing information/knowledge across institutions. Additionally, various nursing libraries are offering Medline, CINHALL, and etc. as well as internet search service in the library.

Nursing education can be steadily improved by incorporating instructional

content and innovative teaching strategies. Information technology is a tool that can build cooperation, collaboration and network, which results in better quality nursing education.

#### **• Nursing Practice**

Currently CISs have been implemented in large hospitals in Thailand. Most systems serve the administration, financial, pharmacy, radiology, and registration departments. Nursing informatics has not been explicitly used in the nursing practice area. Even most nurses still use paper-based patient records for nursing documentation. Nurses in some units have begun to use database programs such as Microsoft Access in order to keep some data for monthly/annual reports. This is the first step in implementing computer technology for decreasing the time for reporting. Therefore, informatics nurses can contribute to professional development of colleagues by sharing knowledge and skill in nursing informatics. In addition, informatics nurses can work with other nurses in developing databases in each unit for use in outcome measurement and quality control.

Many hospitals are in the process

of implementing clinical information systems, therefore informatics nurse specialists have the important role of identifying the problems in nursing informatics research, such as the benefits of CIS for nurses. Nursing informatics specialists must participate in CIS selection. Due to the impact that nurses have on patient outcomes, other professionals must not attempt to dictate nursing system design. No one understands the nursing profession as well as nurses.

Currently nursing informatics research shows that nursing informatics can improve nursing by using information technology in improving decision making and disseminating nursing knowledge and health information. Therefore, informatics nurse specialists can take action on combining information technology and necessary context of quality nursing care and health information to nurses, healthcare providers and patients at different level of the healthcare system. This will result in increasing the coverage of providing health care information.

Informatics nurse specialists are involved in the International Classification for Nursing Practice (ICNP) to establish a



common language for describing nursing practice in order to improve communication, to describe the nursing care of people, and to enable comparison of nursing data across setting and geographic areas. ICNP also demonstrates or projects trends in the provision of nursing care and the allocation of resources to patients according to their need based on nursing diagnosis. Moreover, ICNP stimulates nursing research and provides nursing practice data to influence health policy 2.

In 1998, The Department of Nursing, Faculty of Medicine at Ramathibodi Hospital had piloted a project to provide "Standard Care Plan" in Pediatric Units and presently, the nursing data base preliminary focuses on the intervention that nurses performed and nursing time in each activity. The projection is an ongoing study that will include nursing problem and nursing outcome in the data base later on. A private hospital "Bhamrungrath Hospital" has also established an on line nursing data base in the hospital computer system. The nationwide effort to implement of nursing data set has been initiated by the Division of Nursing, The Ministry of Public Health. ICNP has been initiated selected as data

base of the nursing service by the Ministry of Public Health. Therefore, it was expected that ICNP will be used nation wide in the future.

#### • Thai Nursing Administration

Nurse administrators use information to make decisions but most information is not managed well. Computers are frequently used just to collect data not to analyze it. Evidence of the use of information technology by nurse administrators in Thailand is primarily limited to information exchange via e-mail in university hospitals.

As in other areas, information technology promises many benefits in nursing administration and management. It can increase communication, increase the quality of decision-making, and assist in the evaluation of outcomes. It is crucial to have better nursing information management to provide information for nursing administration. For example, instead of collecting data on paper for monthly/annual reports, informatics nurses can design information technology solutions to establish an easily accessible and retrievable database to provide information for nurse administrators. Moreover, informatics nurse specialists can use the decision support technology to

design tools assist nurse administrators in making decisions.

- **Thai Nursing Research**

Nursing research is necessary to improve the quality of the nursing profession. Nurses have conducted research both in nursing and in public health. Some of the research has been published in journals at their workplace. Some has been presented in research papers, which are disseminated to various institutes. Nursing informatics specialists can enhance the efficiency of nursing research by facilitating the development of databases containing Thai nursing practice related information. Nurses around the country can access these databases in order to know the current nursing situation and continue to do research in areas of their interest, which leads to an overall gain in nursing knowledge. In Thailand, there is an urgent need to accomplish a computerized nursing research data base for the use of nursing personnel and nursing students.

Some nurses lack the knowledge or desire to conduct nursing research. This may be due to a lack of understanding of the research process or the perception that research collaboration is unobtainable. At

the same time, many resourceful persons are in nursing educational institutes looking for collaborators in clinical practice. Nursing informatics can increase the collaboration between the two groups by using information technology to provide information about research resources and creating ways for nurses with similar interests to find each other.

### **The Limitations of Nursing Informatics in Thailand**

Nursing informatics is a specialty that promises to enhance the quality of nursing, but nursing informatics is developing slowly in Thailand because of economic constraints, technical constraints, and the limitations in human resources. Thailand has faced an economic crisis since 1997. Therefore, many plans that related to implementing information technology in health care organizations were also affected by this economic crisis. The development of a computer network in the Ministry of Public Health as well as other organizations have slowed down. The economic problem also affects implementing an information system in educational institutes because budget expenditures have been cut.

Economic problems have contributed to inadequate numbers of computers and network systems in health care institutes and nursing education institutes. Therefore, health/nursing information management by using information technology is limited.

Considering the goals of information technology development, many professions use this technology to improve work processes. The use of information technology in health care is only expected to increase, therefore nurses need to know more about the use of computers and information technology. However, only few nursing educational institutions in Thailand offer courses on computer applications. The content of these courses relates to how to use the basic application software not nursing information management. Only one nursing institute has offered nursing informatics course as an elective course for graduate students. Therefore, there are no informatics nurses in Thailand. Currently the information technology profession has more influence on nursing information management.

### **The Implementation of Nursing Informatics in Thailand.**

Although there are some limitations in implementing nursing informatics in

Thailand, the benefits of nursing informatics for the nursing profession are tremendous. The primary opportunity of implementing nursing informatics is to develop the human resources in this field. Education is a way to develop and to increase the human resources available for nursing informatics in Thailand. Therefore, the suggestions for implementing nursing informatics in Thailand are as follows:

1. Prepare nursing students in computer and information management by offering nursing informatics courses.

The computer application courses that are being taught in current nursing curricula is inadequate for preparing nurses in this information age. Nursing educational institutes should offer nursing informatics programs. According to nursing informatics competencies<sup>3</sup>, nurses should have skills in using computer-based technology for managing nursing data and information. Therefore, in the nursing curriculum, the content about information management at the baccalaureate degree should cover the use of basic information tools, independently learning about computers and information management, and using computer systems and specialized databases. For the graduate

level, the content should cover the knowledge about modifying systems and specialized databases, designing new applications, building systems for personal applications, and using new tools.

2. Provide continuing education in nursing informatics

There are no nursing informaticists in Thailand, but more nurses are becoming interested in information technology and computers. A trend of increasing interest in nursing informatics is occurring within Thai nursing circles. Moreover, information technology has changed rapidly, making the quest for informatics knowledge an ongoing and ever-changing endeavor. Therefore, providing a nursing informatics program or short course training is crucial.

3. Design projects that increase the efficiency of nursing information management, which will result in increasing the quality of care.

Nursing informatics has an enormous potential to improve the efficiency of nursing practice. The success of implementing nursing informatics needs the cooperation of nurses in all areas. Presently, there is a task force group of ICNP. The ICNP project requires nurses

from all specialties to define nursing diagnosis, interventions and outcomes.

However, this project will be more efficient if informatics nurse specialists are involved in developing an architecture for the proposed lists. Finally, another project is the cooperation between nursing educators and nursing informatics to develop computer-assisted instructions to distribute nursing knowledge across nursing educational institutes. This sharing of resources and expertise is efficient and benefits both nurses and patients.

4. Increase nursing roles in CIS implementation

Currently, many hospitals have initiated CIS implementation, nurses cannot avoid the introduction of computer technology in the workplace. The involvement and "buy-in" from nurse users is a critical component of system success. However, nurses who lack of a working knowledge of system development and implementation are at a disadvantage. Education conference to assist nurses in exploring this new role in system development can increase understanding, involvement, and acceptance of new technology.



## Conclusion

Nursing informatics assists nurses in increasing the efficiency of their work in every area: nursing practice, administration, research, and education. It is important for Thai nurses to learn more about information technology to improve the body of nursing knowledge. Offering nursing informatics courses at every level of the Thai nursing curricula is the way to prepare nurses in the nursing informatics area. Using other professions to manage nursing information is not a good way to improve the nursing profession as has been evidenced in the U.S. It slows the development of nursing. Thai nurses should prepare for the information age by collecting nursing data/information and translating it into nursing

knowledge. The success of the nursing profession depends on the collaboration and cooperation of all nurses, not only in Thailand but internationally as well.

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## สารสนเทศทางการพยาบาลกับการปรับปรุงการพยาบาลในประเทศไทย

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**บทคัดย่อ** สารสนเทศทางการพยาบาลเป็นสาขาวิชาที่ประยุกต์ใช้ความรู้ทางด้านเทคโนโลยีสารสนเทศในการจัดการข้อมูลทางการพยาบาล พยาบาลในประเทศไทยซึ่งเป็นประเทศที่กำลังพัฒนาที่สามารถประยุกต์ความรู้ในสาขานี้เพื่อเพิ่มประสิทธิภาพของการพยาบาลทั้งทางด้านปฏิบัติการพยาบาล การบริหารการพยาบาล การศึกษา และการวิจัยทางการพยาบาล พยาบาลควรมีการเตรียมความพร้อมในการเข้าสู่ยุคเทคโนโลยีสารสนเทศเพื่อนำข้อมูลทางการพยาบาลที่มาใช้ได้อย่างมีประสิทธิภาพและพัฒนาศักยภาพความรู้ทางการพยาบาล การจัดเตรียมหลักสูตรทางการพยาบาลที่ส่งเสริมให้พยาบาลมีความรู้ในการจัดการข้อมูลจึงเป็นสิ่งจำเป็นเพื่อเตรียมความพร้อมในการก้าวสู่ยุคข้อมูลข่าวสารในโลกปัจจุบันและอนาคต งามาธิคดีพยาบาลสาร 2542; 5(3) : 263-72.

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