Nursing Informatics: The Future Now

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Abstract: *Technological advancements in the health care field have always impacted the health care disciplines in a way they are being practiced. Nursing practice has also been greatly influenced by the technology a lot. In the recent year's use of information technology, computers, handheld digital devices, internet has advanced the nursing by bridging the gap from nursing as an art to nursing as science. In every sphere of nursing practice, nursing research and nursing education nursing informatics plays a very important role. If used properly it is a way to save time, helps to provide quality nursing care and increases the proficiency of nursing personnel.*
Key words: *Nursing Informatics, Nursing Information System*

I. Introduction

Nursing informatics is a relatively new area and speciality of nursing. It is a rapidly developing area of nursing that has been recognized as a profession.[1]With the consideration that today's nurses spend up to 50% of their work time only in documentation, Information technology and computerization comes to their saviour.[2,3]

Being recognized by American Nurses Association in 1992, nursing informatics is defined as a specialty that integrates nursing science, computer science, and information science to manage and communicate data, information, knowledge, and wisdom in nursing practice. It facilitates the integration of data, information, knowledge, and wisdom to support patients, nurses, and other providers in their decision-making in all roles and settings. This support is accomplished through the use of information structures, information processes, and information technology.[4,5] It is also concerned with legitimate and efficient use of data, information and knowledge. Now a day's wireless communications, monitoring systems run with computerized backbones, and computerized ordering and documentation have became fundamental to nursing practice and service.[1] The realization that health care data and information can be effectively managed and communicated using computer systems, networks, modems and telecommunications (Figure 1) has catalyzed the emergence of the science of nursing informatics. Because of the benefits involved now a day's more and more nurses are using this technology with an ease as during the year 2004-2008 the nursing informatics workforce has been increased by more than 6%. [6]

Figure 1: Use of advanced technology in Nursing Informatics

II. Documentation Is A Primary Emphasis In Nursing Informatics:

In nursing informatics more emphasis is given on documentation because quality care depends on effective communication among healthcare providers. Since healthcare professionals communicate primarily through the notes they write in a patient's chart, nurse informaticists seek to continually improve the speed, timeliness and accuracy of patient charting. When health workers have access to more up-to-date, complete patient notes, they can make better decisions about a patient's care. Instead of spending each shift handwriting

notes into every patient's chart, nursing informatics makes it possible to record notes sooner and faster using computers, handheld devices, voice recognition and other tools. [1,2,7]

III.   Nursing Information System

Nursing information systems (NIS) are computer systems that manage clinical data from a variety of healthcare environments. This system is made available in a timely and orderly fashion to aid nurses in providing and improving patient care. In day to day nursing practice nursing informatics can be applied to model the processing of data, information, and knowledge within a computer system. It processes the nursing data to information and thereafter to nursing knowledge (Figure 2). Most of the Nursing Information Systems are designed using a database. For nurses' aid and delivery of patient care Nursing Information Systems provides certain features such as patient charting, staff scheduling, Clinical Data Integration, Decision Support etc. [7,8]
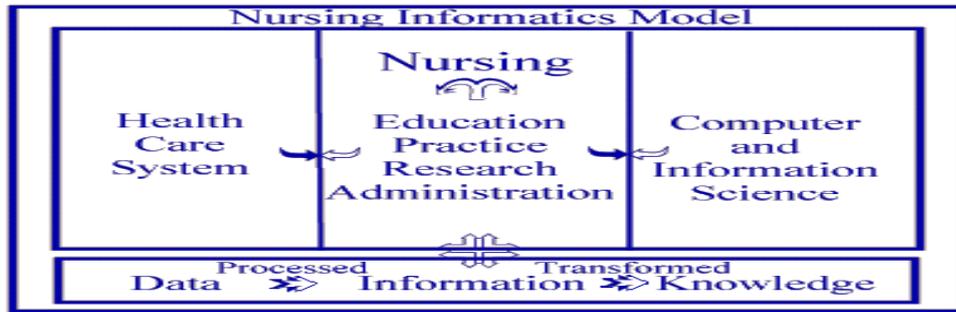

Figure 2: Model Adapted from Nelson & Roos (1992), Computer Applications in Nursing Education and Practice.

IV.   Using Computers To Speed Up The Nursing Process:

Nursing process is an ultimate part of nursing profession and use of computers, internet, telephones, digital devices etc can increase efficiency and accuracy in all phases of the nursing process. It can help to meet standards of nursing practice and helps to spend more time meeting patients' needs. Consider the following uses of computers in the nursing process. [8]

STEPS OF NURSING PROCESS	USE OF NURSING INFORMATION SYSTEM
ASSESSMENT	Use the computer terminal to record admission information. As nurses collect data, enter further information as prompted by the computer's software program. Enter data about the patient's health status, history, chief complaint, and other assessments.
DIAGNOSIS	Most current databases list standard diagnoses with associated signs and symptoms as references. After the nurse uses her clinical judgment to determine a nursing diagnosis for each patient, then rapidly get information related to that diagnosis.
PLANNING	To help to begin writing a plan of care, newer computer programs display recommended interventions for the selected diagnoses and expected outcomes.
IMPLEMENTATION	Use the computer to record interventions and patient information, such as transfer and discharge instructions, and to communicate this information to other departments.
EVALUATION	During evaluation, use the computer to record and store observations, patients' responses to nursing interventions, and a nurses' own evaluation statements. If a desired patient outcome hasn't been achieved, record new interventions taken to ensure desired outcomes.

V.   Challenges Ahead

Nursing informatics plays an essential role in the future directions of healthcare by defining the relationship between nurses and information technology as well as the knowledge that can be gained when these domains work together. The main challenge to nursing is how and what can be done to advance nursing informatics in the coming years. Every nursing professional ensures that information technology, use of computers remain integral part of professional nursing. The domain of nursing informatics continues to grow as nursing incorporates expanded roles and new technology into practice. Every professional nurse requires a baseline understanding of informatics for true mastery. They will have to utilize their full capability, capacity and decision making while working on any information media. [2,6]

VI.   Conclusion

The evolution of nursing informatics continues. The involvement of nurses in designing and implementation of nursing information system is of paramount importance. The nursing information system is much more than a data repository. From nursing assessment till the evaluation, from the admission to the discharge of the patients, form simple to complex work in every area nursing informatics has a role. If used

properly, it is a tool to demonstrate the value of nursing care. So for its effective use more and more work, training and research should be conducted.

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