THE RIGHT BALANCE BETWEEN TECHNOLOGY AND PATIENT CARE

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Abstract:
In today's healthcare system, information technology is the foundation of the future. Healthcare modernization is best visualized if we compare how we were thirty years ago and where we are today. The need for improvement was the driving force behind the evolution of computers in healthcare. The majority of the past thirty years of technological expansion was spent on computer programs for administrative purposes while the past decade has seen as emphasis on the clinical process. Patient care has become a primary focus in the development of new concepts and knowledge in healthcare technology. Technological development in clinical applications is the current trend in healthcare and it will continue to play a major role for years to come. This article will describe the participation of nurse informatics specialists in adopting the right balance between the electronic documentation in nursing workflow and quality of patient care.

Keywords: Documentation, Evidence-Based Practice, Nursing Informatics, Technology, Patient Care.

Introduction:

Healthcare information technology began with the computer in the early 1970s and did not see a broad acceptance until individual computers were made available at the end of the decade. In spite of the advancement of the computer, actual clinical patient care was never a consideration until well after the turn of the 21st century. Cross over from administration to clinical applications started with individual departments that needed to speed up the process in order to provide better outcomes. Some of the automated systems began with radiology, pharmacy, and laboratory. This beginning then began to be adopted in other clinical departments. Information technology is quickly changing in all areas worldwide, creating new challenges and opportunities for different industries every day, including healthcare [1].

The healthcare industry recognizing the need for communication between information technology personnel and healthcare practitioners in order to address the issues of patient care, created nurse informatics specialist positions. Nurse informatics specialists are an integral part of the healthcare delivery process and a deciding factor in the selection, implementation and evaluation of healthcare, which supports safe, high-quality and patient-centered care. Nursing informatics is a specialty that integrates nursing science and computer science to manage and communicate data, information and knowledge in nursing practice. Nursing informatics can also be defined as any use of information technology by nurses for the purpose of enhanced patient outcomes, the management of healthcare facilities, nurse education and nursing research [2].

2. Nursing Documentation and Information System

Many healthcare individuals associate the field of nurse informatics as having two types of roles, the clinician who uses the health information technology and the specialist, who creates, facilitates, tests, and implements new information technology. Healthcare settings now integrate electronic medication prescribing, tele-health, online appointment scheduling and mobile laboratories where informatics nurses are essential in guaranteeing that the computerized solutions interface with each other [3]. In order to accomplish information related activities, informatics nurses must synchronize and exchange significant clinical and technical information with the goal of supporting and coordinating safe, effective patient care and assuring an efficient workflow[1]. A vital element of healthcare information is nursing documentation. Information systems are designed for nurses where documentation can be best utilized to expand their knowledge of quality of care. The evolution of knowing has been exponential in the past forty years due to the new ways of learning that have been discovered. Nursing in particular has benefitted from these new concepts and continues to find newer and better methods to improve patient care. Nurses bring to their practice a personal history that develops the way their nursing care is performed. Nursing theory, standards of practice, legal and ethical obligations must be understood and utilized to enhance the quality of nursing care [4].

The electronic patient record has become an important aspect in the information workflow, and using information technology will result in improving patient outcome quality and efficiency. Patient documentation is a vital skill in communicating the patient's condition and organizing their care according to the patient's needs. Nursing practice is primarily guided by patients' needs and depending on those needs and their environments, different theories can be applied for individualized care. The application of individual nursing practice is based on combination of medical, philosophical, psychological and other nursing theories [5].

Before the digital age, nurses were utilizing paper forms to document important patient information. A significant factor in the nursing profession and healthcare systems is the transition to electronic documentation. Electronic documentation contains flow sheets that help in assembling information about the patient's needs, improve the patient's information accuracy, and enhance the quality of patient care [3]. A well designed information system can facilitate and provide an easier and faster information flow that is needed for efficient documentation processing. Nurses play an essential role in patient's safety where the quality of the nursing environment and electronic documentation has a positive influence on patients. The electronic documentation method has evolved to provide a plan of care for patients, efficient communication between clinicians, and direct patient care processes. Nurses are very diligent in coordinating, monitoring and delivering patient care to guarantee effective documentation flow. Nursing computer based software allows nurses to collect, store, recover data and integrate clinical data with nursing management resources[5].

Among multiple healthcare organizations, nurses represent the largest technology user group. In the beginning nurses believed that electronic documentation and information systems were an interruption to their daily workflow and a disruption from bedside care. Over the years however, nurses have become more

accustomed to the technology, which is positive since their acceptance of it is imperative to successful system implementation. Today, nurses are more proficient in all aspects of information technology while maintaining superior levels of patient care [6].

Most nurses now have a positive attitude related to the improved quality of electronic documentation and a new appreciation of the decreased workload afforded when using a well- designed system. However, despite the benefits of electronic documentation for nursing workflow, there are barriers that can obstruct the utilization of computerized documentation systems. Some of these barriers can result from behavioral issues in regards to perception and satisfaction toward information technology and the time spent documenting the patient information [4]. The challenge comes when some nurses (i.e. older nurses) have doubts about working in a nursing environment filled with technology. Even though they are provided with reference guides, screen shots, and cheat sheets that are helpful, some nurses still have a hard time adjusting to electronic charting. Some of them have a fear of clicking in the wrong place as they work with computerized charts and they become aggravated when they cannot perform their electronic tasks [7].

With electronic charting, nurses have the capability of accessing information quickly and efficiently and are able to use information to improve the quality of nursing workflow. In most of these situations, nurse informatics specialists play a pivotal role in assisting nurses in identifying and addressing these challenges. Many nursing theories have been developed to promote nursing practice efficiency. For an informatics nurse, change theory is the most integrated theory in their practice. Nurse informatics specialists apply theories in directing patient care, while providing guidance and technical assistance for staff nurse workflow as well as providing leadership for system change [1].

3. Nursing Informatics

The informatics nurse is part of the delivery of care, the building of knowledge, skills, and the experience in the use of information technology. They often lead clinical informatics committee meetings that have a major influence for nurses in assisting them to coordinate all the multifaceted technology activities in regards to patient care, documentation and safety [8]. Informatics committees provide continuing guidance in the development and implementation of information technology and digital solutions for nursing practice and patient care. The significance of developing and maintaining positive attitudes and computer-use acceptance among nursing staff have been discovered in multiple literature reviews. For a successful implementation of an electronic documentation system, it is important to understand the various levels of computer familiarity, and acknowledge nurses' computer use needs, attitudes, skills, beliefs and readiness to learn. An informatics committee also provides structure, support and staff development to nurses from different departments who interface with or are impacted by information technology [2].

Informatics and nurses support for ongoing professional development that implements the work knowledge of nurses leads to high quality care and patient satisfaction. Research reveals the importance of nurse's involvement in informatics committee meetings where they can participate in system design, redesigning workflow, and improving interdisciplinary communication [3]. Many nurses are professionally and ethically motivated to contribute to new knowledge, high quality improvement, and innovation

through evidence based decision making [5].

4. Evidence-Based Practice and Technology

Evidence-based practice and decision-making began with Florence Nightingale in the 1850s during the Crimean War. She realized a correlation between poor sanitary situations in the hospitals and rising death rates among wounded soldiers. Since Nightingale's work in improving healthcare conditions, the progress of evidence based practice has evolved over time. Effective nursing care relies on the gathering and use of nursing evidence [4]. Evidence based practice functions as the key standard for quality in nursing practice by enhancing patient satisfaction. Evidence-based quality improvement was redesigned to transform healthcare into an environment of care that is effective, safe, and efficient. Research is being used progressively as the basis for clinical decisions in many organizations [9]. The stream of information through the increase of technology, has transformed the decision-making process for clinicians. Research authenticates, enhances and creates a scientific base for nursing practice and is facilitated and disseminated through the use of information technology and nursing informatics. The nurse's ultimate goal through the use of information technology is patient education, while providing high quality care and most importantly patient safety [8].

It has been observed that patient education has slowly become a major concern and that hospitals want to get involved in implementing better education for patients and their families. The importance of patient education is an example of critical study and evidence based practice by nurses that has shown that knowledge, on the part of patients and their families, can reduce re-admission rates, decrease healing time, improve mental discomfort, and produce better patient results [10].

Today, patients are educated with the help of technology including modern televisions, I-pads and other sophisticated electronic devices where the patient can watch, learn and explore their illnesses and care [1]. Partnership with team members and families is essential to optimal treatment. The application of individual nursing practice is based on an arrangement of the clinician and the patient. Traditional patient education relied on written material about disease processes, medication, medical management, and self-care instruction guidelines. Today, patients benefit from many forms of education and with all these forms of education nurses can provide patients with knowledge that enables them to understand the disease process and make important decisions about their health. Nursing interventions in proper patient education improves patient self-care, satisfaction, moral support, coping skills and mental stability. Addressing improvement in nursing workflow is essential to the improvement of patient stability and safety [7].

5. Conclusion

Healthcare outcomes including quality of life measures are the result of a multifaceted relationship between the patient, the nurse, the treatment and the information healthcare system. A strong foundation for addressing the challenges of electronic documentation is the informatics nurse's capability to understand and direct the balance of patient care with the technology systems and organizational structure that supports this balance. In order to guarantee a successful implementation of a computer system while managing patient care it is important to integrate nurses' perceptions, beliefs, and knowledge in the use of new technology and how nurses implement this technology into their daily nursing

practice. Finding the right balance of information science in conjunction with nursing science is a continuing process that will rely on the forward thinking and perseverance of today's modern nurse and the support of nursing informatics specialists.

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