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Nurse Angie: Interactive Voice Recognition With Artificial Intelligence

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Introduction
The Department of Labor Statistics reports the demand for registered nurses will reach 3.23 million by 2020, with 1.05 million jobs opening due to growth and retirement (Williams, 2016). The Texas Department of State Health Service 2018 reports the nursing shortage is projected to have a sixty-thousand-person deficit (or 20%) by 2030. The nursing shortage will cause increased healthcare needs in nursing care at the bedside.
Background
With the transformation from the Industrial Age to the Digital Age, nursing knowledge needs to adapt to a change in practice (Harrington, 2016). It is time that nurses think of ways to move the profession to the next level in the digital world of technology. It is time for a paradigm shift in nursing to enhance the way nurses are providing care at the bedside. Therefore, nurses need to create technology to support the bedside nurse. The use of technology allows for many ways to improve the healthcare setting and assist the bedside nurse. With the use of technology, nurses can improve healthcare at the bedside with improved patient satisfaction, increased patient safety, and improved nurse's satisfaction, all while decreasing the nurse's workload. The use of technology can bring nursing back to its intended purpose of caring for individuals while creating a caring environment.

Current Technology

There are many sources of technology, like webcams, computers, telephones, and monitoring devices to name a few. The electronic medical record allows for automated collection of data for analysis to improve operational processes in the acute care setting (Harrington, 2016). EHR's have also improved continuity and consistency of information sharing among the healthcare team (Chapman, 2016). Another source of technology at the bedside are applications with smart phone apps to assist the nurse with patient education, calculations for medications, and to translate information for communication with patients (AACN, 2016). User centered apps are helpful to healthcare settings to assist in assessing chronic conditions and reducing of medical cost consumption (Birkhoff & Smeltzer, 2017; Chiang & Wang, 2016). Smart sensors allow for monitoring and detection of well-being an example would be fitness band or insulin pump. Artificial intelligence is the simulation of human intelligence by machine; one example would be IBM Watson in health care. (Levanthal,2018). Watson is a voice activated assistant that assists the patient at the bedside with information about the hospital and the patient's schedule of medications. The concept internet of things (IoT) allows for interconnectivity of web-enabled devices, such as meters that track blood glucose, heart rate and blood pressure to allow for real time data (Harrington, 2017; Harrington, 2018; Lamphere, 2018; Leventhal, 2018).

Future Technologies

Additional types of technology in healthcare are robots with a prediction from the International Federation of Robotics of an increase of 20% to 25% in sales in 2018 through 2020, reaching $27 billion in the US (Harrington, 2018). In nursing, the use of humanoid or humanlike robots are increasing (Lamphere, 2018). These robots assist the nurse with lifting patients and delivering documents. Telebot robots, are controlled by humans via remote control to deliver care to individuals with communicable diseases. Autonomous robots are programmed to react to external stimuli such as companion robots or electronic person (Archibald & Barnard, 2018; Harrington, 2018; Lamphere, 2018).

Next Generation Technologies

The next generation of technologies in nursing involve nursing holograms. Hologram nurses can utilize artificial intelligence for reminding patients to take meds, encourage exercise, read books, and carry on conversations with patients and they can be personalized to appearance, speech, and language (Harrington, 2018).

Nurse Angie

We are working on an emerging technology of “Nurse Angie”. Nurse Angie is a secure interactive voice recognition activated software recorder that assist the nurse with transcription of documentation such as Head to Toe Assessment, Nurses Notes, and Medication Administration with the use of artificial intelligence. Nurse Angie Interfaces with the Electronic Medical Record (EMR) allowing the nurse more time with their patients and decreases the time spent on the computer. Nurse Angie can educate patient on their disease condition, medications, diet, and physical activity. Nurse Angie is culturally sensitive with language preference for communication with patients of different ethnicities, the appearance can be customized to meet the patient needs and information is translated from patient to nurse for ease of care at the bedside.

Conclusion

As we grow into the Digital Age, nurses will be utilizing more technologies in their everyday practice. These technologies should focus on creating greater value, enriching patients’ experience, and improving operational capabilities (Harrington, 2016). These technologies should augment nurses’ care and knowledge while creating empirical value for facilities with information. As DNP leaders we need to look at ways to change the nursing practice to keep up with the demands of healthcare. A pragmatic approach to applying technology in nursing care, enhances and reorganizes the nurses’ care. These technologies have many benefits in nursing practice at the bedside.

Title:

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Acute Care, Artificial Intelligence and Bedside Nurses

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Abstract Summary:

Interactive voice recognition software that assist the nurse with transcription of documentation such as head to toe assessment, medication administration, and nurses notes with AI. Nurse Angie interface with the Electronic Medical Record to allow the nurse more time with their patients and decreases the time spent on the computer.

Content Outline:

Nurse Angie
I. Introduction
1. Nursing Shortage
2. Technology to Improve Nursing Practice

II. Background
A. Current technology
1. Bedside
1. Monitors
2. Computers
3. Webcams
4. Telephone
5. Monitoring devices
2. Electronic medical record
1. Data Analysis
2. Core Measures
3. Applications
1. Medication Administration
2. Education
3. Translation
4. Smart Sensors
1. Fitness bands
2. Insulin pumps
5. Internet of Things
1. Web
2. Realtime data
B. Future Technologies
1. Artificial Intelligence
1. IBM Watson
2. Voice activation
2. Robotics
1. Humanoids
2. Telebots
3. Autonomous
C. Next Generation Technologies
1. Hologram Nurse
1. Culturally diverse
2. Artificial Intelligence
3. Conversational
D. Nurse Angie
1. Artificial Intelligence
1. Interactive voice recognition
2. Nursing Documentation
3. Patient Education
4. Culturally diverse
III Conclusion
A. Innovation
B. Change in nursing practice

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Author Summary: Education: In 2011, she attended West Texas A&M to obtain her BSN/MSN in Nursing Education. Currently, she is attending Texas Tech University, in the Doctor of Nursing Practice, Nurse Executive program. Professional practice: Ms. Ross has over 12 years of experience in Nursing with four years teaching at the associate's degree level. Currently, she works at the Veterans Health Administration in Quality Management. Owner of A+ Diabetes a veteran-owned business and creator of Nurse Angie.