



How the nursing profession should change to prepare for the digital age

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Abstract: As healthcare continues to evolve, the nursing profession must adapt to keep pace with technological advancements. The digital age presents a significant opportunity for nurses to improve patient care, enhance communication, and streamline administrative tasks. Where the nursing profession can change to prepare for the digital age, including the need for nurses to develop technological competencies, embrace telehealth and virtual care, and integrate electronic health records into their practice. Additionally, the importance of ongoing education and training for nurses to remain up to date with emerging technologies is emphasized. The nursing profession must take a proactive approach to prepare for the digital age and leverage technology to improve patient outcomes and enhance the quality of care.

Keywords: Digital age, Hospital Information System, Tele Health.

The nursing profession is undergoing a significant transformation due to the increasing use of digital technologies in healthcare. This shift has created a need for nurses to adapt to new ways of delivering patient care, managing data, and communicating with colleagues and patients. To prepare for the digital age, the nursing profession should focus on developing digital competencies and incorporating technology into nursing education and practice. This includes enhancing nurses' ability to use digital tools for documentation, communication, and clinical decision-making, as well as expanding their knowledge of emerging technologies such as telehealth and artificial intelligence. Additionally, nursing leaders should invest in digital infrastructure to support nurses' use of technology and encourage interdisciplinary collaboration to foster innovation and improve patient outcomes. By embracing these changes, the nursing profession can enhance the quality and safety of patient care, increase efficiency, and improve nurses' job satisfaction and career opportunities in the digital age.

Globally, digital technologies have an expanding impact on nursing. Increasing reliance on telehealth and other virtual models of care, particularly in response to the COVID-19 pandemic, is one example. Others include the presence of artificial intelligence (AI) and robotic systems, the prevalence of mobile, internet, and social media, and the dependence of society on these technologies.

Despite significant advancements to date, there are still problems with nursing's use of digital technology. The fact that most nurses have not kept up with the quick advancements in digital technology and their effects on society is a constant source of worry. This restricts the advantages they might have for patient care and nursing practice. Nursing must begin its urgent transformation into a digitally empowered profession that can address the complex global concerns facing health systems and society to meet these challenges and get ready for the future.

Several examples demonstrate the advantages that digital technology has already brought to nursing practice and education. For instance, telemedicine initiatives that have nurses monitor, mentor, and triage patients with a variety of chronic conditions regularly have reduced the number of admissions to emergency rooms.

Mobile devices, in particular smartphones and health applications, are enabling nurses to offer remote advice on pain management to adolescent patients with cancer and supplement aspects of nursing education by providing innovative pedagogical solutions for content delivery and remote learning opportunities.

Selected Technologies: Benefits & Challenges

Numerous analyses of digital technologies used in practice, education, and rehabilitative and personalized healthcare are found in the literature on nursing. These technologies include hospital information systems, electronic health records, monitoring systems, decision support, and telehealth (e.g., assistive device sensors, and ambient assisted living). Table 1 summarizes the Potential benefits and challenges of emerging innovations to practice.

Emerging Innovations	Benefits	Challenges
Electronic Health Records	EHR provides nurses with access to comprehensive patient information, making it easier to track and manage patient care, and helps to reduce errors and improve patient safety.	Implementation of EHRs can be complex and time-consuming and there be challenges related to data security & privacy.
Telehealth	Telehealth allows nurses to provide care to patients remotely, which can improve access to care for patients in rural or underserved areas. Telehealth can also reduce healthcare costs and improve patient outcomes.	Challenges related to the quality and reliability of internet connections and technological literacy among patients.
Mobile Health (m health)	mHealth refers to the use of mobile devices, such as smartphones and tablets, to provide healthcare services. mHealth can improve patient engagement, enable real-time communication between patients and healthcare providers, and provide access to health information and resources.	Challenges related to data security and privacy, as well as concerns about the accuracy and reliability of mobile health apps and devices.
Wearable Technology	Smartwatches & fitness trackers can provide nurses with real-time information about patients' vital signs and activity levels. It helps them to monitor their health and take a more active role in their care.	Accuracy & reliability of wearable devices, as well as concerns about data security and privacy.
Artificial Intelligence	AI can help nurses to analyze large amounts of patient data and identify patterns and trends. AI can also help to automate certain tasks, such as medication administration and patient monitoring.	Accuracy & reliability of AI algorithms, as well as concerns about the ethical implications of using AI in health care.

Build a Nursing Leadership in Digital Health

1. Offer Education and Training: The first step in developing leadership in digital health is to educate and teach nurses. Digital health technologies, such as telemedicine, electronic health records, health information exchange, and patient portals, require a solid understanding from nurses. Giving nurses access to training and ongoing education opportunities can aid in the development of their expertise in these fields.

2. Foster a culture of Innovation: Healthcare organizations must promote an innovation culture that motivates nurses to use their imaginations and adopt new technologies. This can be accomplished by holding frequent brainstorming sessions, holding innovation competitions, and giving nurses the tools and resources, they need to explore new concepts.

3. **Promote Mentorship:** Nurses who are leaders in the field of digital health can help mentor and direct other nurses who are passionate about the field. One-on-one coaching, the development of peer networks, and the creation of official mentorship programs are a few examples of how to do this.

4. **Support advocacy initiatives:** Nurses in management positions can fight for laws and rules that encourage the use of digital health technologies. This can involve engaging in lobbying efforts on behalf of the legislation, collaborating with professional organizations, and attending trade shows and other events.

5. **Work with Other Disciplines:** Developing nursing leadership in digital health necessitates working with other healthcare disciplines, including IT specialists, data scientists, and healthcare administrators. Creating alliances and encouraging interdisciplinary cooperation can assist nurses in honing their leadership abilities in digital health.

6. **Encourage Patient Engagement:** While digital health technology can give patients more control over their health, it can also present new difficulties for nurses. By supporting patient-centered care models, offering patient education materials, and utilizing digital tools to enhance communication and care coordination, nurse leaders in digital health can contribute to the promotion of patient involvement.

Re-envision Nurse - Patient Relationship

The nurse-patient relationship is a crucial aspect of health care that can significantly impact the quality of care and patient outcomes. To re-envision this relationship, we need to move beyond the traditional view of nurses as caregivers and patients as passive recipients of care. Instead, should aim to create a collaborative partnership where nurses and patients work together to achieve optimal health outcomes.

Some ways can re-envision the nurse-patient relationship:

1. **Empower patients:** Patients should be empowered to take an active role in their care, including making decisions about their treatment options. Nurses can support patients by providing them with the information and resources they need to make informed decisions.
2. **Foster open communication:** Communication is key in any relationship, and the nurse-patient relationship is no exception. Nurses should foster open and honest communication with their patients, encouraging them to express their concerns and needs. This can help to build trust and strengthen the relationship.
3. **Practice empathy:** An essential element of the nurse-patient connection is empathy. To provide individualized care that is tailored to each patient's specific needs, nurses should make an effort to comprehend their patients' viewpoints, experiences, and emotions.
4. **Utilize technology:** Technology can help to enhance the nurse-patient relationship by facilitating communication, monitoring patient health, and providing access to educational resources. Nurses should embrace technology and use it to support patient care.
5. **Promote patient-centered care:** Patient-centered care is an approach that places the patient at the center of the healthcare experience. Nurses should work to promote patient-centered care by tailoring their approach to each patient's unique needs and preferences.

Embrace digital Practice.

The profession requires a cultural shift. Its membership and leadership must demand the evolution of digital systems better to meet contemporary and emerging needs.

Too often, technology to support nursing is poorly configured, resourced, or not upgraded to respond to practice and societal trends. Nurses still commonly use practice systems that are lacking basic usability (e.g., contributing to alert fatigue, reinforcing disruptive workflow processes) or generate added documentation burdens because of poor configuration and optimization.

There is huge variation globally in access to, integration of, and sustainability of digital technology. Solutions vary and are context specific. Renewed awareness of digital technology's use brought about by the covid-19 pandemic offers an impetus for change that nurses should embrace.

Tasks are undertaken by nurses that do not add enough value to patient care present opportunities for partial or full divestment and may be better integrated into future technology-enabled processes or delivered by other care providers.

The profession should revisit cultural interpretations of how technology such as drones, robots, and other AI-enabled systems can be considered complementary to nursing practice and process, rather than as competition or adversaries. Collaboration with technology developers, providers, and patients will be essential to ensure success.

Although some outdated nursing activities and processes made redundant or less relevant will likely be missed by some in the profession, digital technology provides opportunities to support new models of care and approaches to nursing practice. We must not allow cultural and historical interpretations of nursing to upend or impede progress.

Reform Nursing Education

We urgently need to establish educational possibilities in informatics, digital health, co-design, implementation science, and data science at the undergraduate and graduate levels. They should offer chances to collaborate with and gain knowledge from engineering, computing, and other interdisciplinary peers. For instance, the field of nursing will require a critical mass of professionals who are knowledgeable about how to use data science to guide the development of nursing knowledge to support practice. These professionals will also require cunning and bravery to guide the creation of innovative patient care models made possible by digital technologies.

The use of technology like AI to enhance practice is of immediate importance, and determining how, where, and why to do so is a developing skill requirement in health sciences and informatics education. To deliver elements of simulation-based education, nursing education should proactively adapt its competencies and curricula for the growing use of digital technologies in all areas of practice. To do this, it should incorporate novel pedagogical approaches, such as immersive technologies like virtual and augmented reality.

Conclusion:

Nursing will continue to offer value and importance to healthcare systems in the coming decades. However, the profession must consider its role, knowledge, and relationships with technologies and patients to remain relevant in digitally enabled societies and healthcare systems and continue to provide compassionate care in a digital world. Without proactive strategic self-reflection, planning, and action, nursing will fail to control its trajectory across the chasm separating the past, present, and future of the practice.

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