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PRINCIPLES OF VIRTUAL NURSING

The American Nurses Association (ANA) defines *virtual nursing* as leveraging remote technology and tools to provide safe and quality patient care through the application of the nursing process by emphasizing communication, compassion, and collaboration throughout the continuum of care.

Virtual nursing is the past, present, and the future of care delivery. Virtual nursing has continued to emerge as a solution to addressing several challenges in nursing and healthcare delivery, including but not limited to

1) Staffing,
2) Increasing patient acuity,
3) Expanding accessibility,
4) Closing the knowledge/experience/complexity gap, and
5) Improving patient experience.

The nursing shortage results from the retirement of a large portion of the aging workforce, nurses matriculating and seeking new opportunities outside of health care, and increasing demand coupled with the increased stress placed upon the profession (Ransford et al., 2024; Sanford et al., 2023). Virtual nursing is *not* a new healthcare technology, as it has been a standard approach to care delivery in specialties like ambulatory and critical care nursing. However, its increased adoption during and since the pandemic has resulted in vast innovation. The adoption of remote solutions in healthcare addresses demand, protects nurses and other healthcare professionals from extensive and repeated viral exposure, and still provides patients with the essential services they need in settings not previously considered for virtual care (Clipper, 2024; Sanford et al., 2023). Virtual nursing care is now offered in environments including but not limited to: inpatient or outpatient care, home care, and extended care facilities.

BACKGROUND

At the 2023 ANA Membership Assembly in Washington, D.C., the organization determined that developing principles that recognized virtual nursing as a practice model innovation was a priority.

The following recommendations were approved:

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1. Develop a national policy that addresses standardization of virtual nursing practice as a modality and consider funding and reimbursement models as well as implications associated with licensure, regulation, and liability.
2. Advocate for technology that meets patients' and nurses' needs.
3. Support data collection on virtual nursing to understand the impact on nurse and patient satisfaction and patient outcomes.
4. Recognize virtual nursing as a source of support for nurses at the point of care. Virtual nurses should support, but not supplant, nursing staff in nursing ratios, matrices, or other measures of staffing levels.

The ANA convened a workgroup comprised of healthcare professionals and subject matter experts actively involved in the provision of virtual nursing in June of 2024. The group met biweekly over a period of 4 months from July 2024 to November 2024 to determine the ideological approach, scope of work, and key components of this report. The scope of work agreed upon by the virtual nursing issues panel was to

- Create and publish a definition of virtual nursing,
- Understand and address implications not limited to: quality, safety, ethicality, finances, regulations, and portability of licensure, policy, staffing, and education,
- Develop principles of virtual nursing or virtual care, and
- Publish, promote, and disseminate the work product.

This body of work is a revision of the 2019 ANA Core Principles on Connected Health that was an update to the 1998 ANA Core Principles on Telehealth to reflect the advances in technology and nursing care that have evolved into virtual nursing, which will be retired with the publication of the ANA Core Principles for Virtual Nursing.

THE DEFINITION OF VIRTUAL NURSING

One of the first questions that the group explored was: What should be included in virtual care? The responses are reflected in this word cloud (Figure 1).

After several meetings, discussions, voting, and vetting, the virtual nursing panel developed and finalized the definition below:

Virtual nursing is leveraging remote technology and tools to provide safe and quality patient care through application of the nursing process by emphasizing communication, compassion and collaboration throughout the continuum of care.

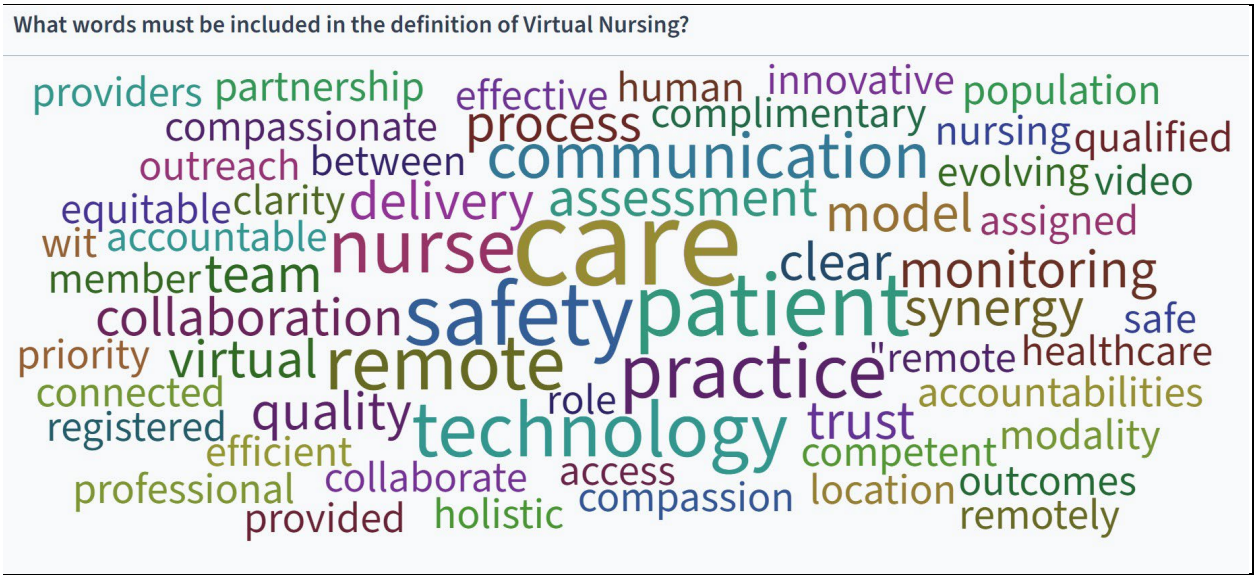

Figure 1

VIRTUAL NURSING: IS IT A MODALITY OR A SPECIALTY?

The group then sought to obtain clarity on whether virtual nursing was a modality or a specialty. Now that virtual nursing transcends multiple specialties (e.g., medical–surgical, progressive, and maternal, infant, and childcare) and settings (e.g., hospital, home, and ambulatory settings), it may create unintentional consequences and confusion if referred to as a specialty. While the group recognized that nurses are seeking certifications in virtual-nursing care, at the time of the meetings and publication of this document, the group still believes that this practice is emerging and still evolving. After numerous discussions, the panel determined that virtual nursing is a modality for providing and supporting care.

QUALITY AND SAFETY

A core aspect of the panel's work was ensuring that the guiding principles addressed the quality and safety of virtual nursing. The panel considered the Institute of Medicine's (2001) "Six Domains of Healthcare Quality" to guide the creation of the Guiding Principles:

- Safe: Avoiding harm to patients resulting from the care that is intended to help them.
- Timely: Reducing waits and potentially harmful delays for both those who receive and those who give care.

- Effective: Providing services based on scientific knowledge to all who could benefit and refraining from providing services to those not likely to benefit (avoiding underuse and misuse, respectively).
- Efficient: Avoiding waste, including waste of equipment, supplies, ideas, and energy.
- Equitable: Providing care that does not vary in quality because of personal characteristics such as gender, ethnicity, geographic location, and socioeconomic status.
- Patient-centered: Providing care that is respectful of and responsive to individual patient preferences, needs, and values and ensuring that patient values guide all clinical decisions.

PUBLIC COMMENT FEEDBACK

Following several iterations, the working principles were distributed for a call for reviewer comments for 3 weeks to subject matter experts and specialty organizations. All feedback was reviewed, considered and incorporated in the final version. Some of the themes from the public comments included

1) Considerations about the impact of artificial intelligence (AI),
2) Concerns about the language surrounding informed consent,
3) Incorporating a global approach for relevance outside of the U.S.,
4) Simplifying as much as possible,
5) Consolidating some of the principles for redundancy,
6) Broadening language for relevance to non-acute care settings, including ambulatory, and
7) Defining and clarifying concepts within the document for general understanding.

POLICY IMPLICATIONS

Virtual nursing is one component of the ever-increasing use of telehealth and of the greater, emerging issue of the use of AI in healthcare. While ANA believes in the use of AI and looks forward to how it can be used in the future, we remain concerned that AI technology has not advanced to the point where its use is reliable. Virtual nursing is a tool in the toolkit for practitioners to care for patients, but its use must be balanced with nurses' input and involvement. As a result, virtual nursing must be utilized widely. Policymakers must ensure that reimbursement is provided similar to in-person care and that AI technology is properly regulated. These regulations should encourage innovation, but simultaneously ensure that human elements are involved in care delivery so that it is used ethically. One of the

challenges ANA recognizes is that technology will move faster than policymakers can issue regulations ensuring its ethical and appropriate use. The need for innovation and regulation must be balanced so that innovators do not face unnecessary delays in bringing their products to market. It is critical that policymakers seek out input from nurses across the care continuum to best inform policymaking targeted at virtual nursing and other technological modalities. Input from nurses is vital as, due to their education and expertise, they understand the various nuances that must be balanced between using new technologies and providing high-quality care to patients.

At the same time, ANA believes that innovation should continue to occur in the healthcare space with appropriate reimbursement. Virtual nursing and other modalities will continue to advance, and healthcare practitioners can look for opportunities to better the delivery of patient care while ensuring patient safety. New modalities are a very effective tool in improving access and allowing for the provision of high-quality care and increasing access. However, reimbursement often lags behind innovation. Nurses who utilize new modalities through innovative models and approaches that include reimbursement can look for opportunities to share their experiences with others. New nurse-led models that are scalable should be researched, scaled, and shared with policymakers seeking to identify new methods and models of efficient, accessible, and high-quality care.

VIRTUAL NURSING AND AMBULATORY CARE

Virtual nursing is evolving, and yet, it is not new technology in the ambulatory care setting. The American Academy of Ambulatory Care Nursing developed a special interest group focused on promoting the role of telehealth nursing in an ambulatory setting in 1995 and then published its first set of standards for telenursing in 2001. However, evidence shows that "comprehensive assessments of the quality of virtual ambulatory care have been understandably slower to progress than the literature on patient and provider satisfaction" (Nayyar et al., 2022). Virtual nursing is being implemented to help address gaps in rural and remote areas to improve access and connectivity for healthcare consumers. However, research on its effectiveness is limited. The review of literature strongly advocates for virtual nursing to bridge the gap between communication and access among families and communities with opportunities for ongoing professional development for healthcare professionals (O'Connor et al., 2023). The important focus on population health, wellness, and public health, which has been amplified during the COVID-19 pandemic, drives the need to continue broader adoption beyond traditional settings.

Virtual nursing in ambulatory health settings has emerged as an innovative approach to improving patient care, enhancing efficiency, and addressing workforce shortages. By leveraging telehealth technologies, nurses providing care virtually can remotely assess

patients, provide education, and assist with care coordination, reducing the burden on in-person clinical staff (Lupton, 2022).

VIRTUAL CARE IN LONG-TERM CARE

Like many nursing areas, long-term care continues to face daunting challenges. Virtual nursing can support care delivery by enhancing the efficiency and effectiveness of skilled nursing homes and assisted living residences while reducing the burden on nursing staff. For example, nurses engaged in virtual care in the long-term care setting can oversee complex medical issues like chronic condition management or sub-acute rehabilitation in real time using remote monitoring technologies. This will allow nurses who provide direct, in-person care to focus on direct patient care while virtual nurses manage routine assessments and track vital signs or medication adherence.

Nurses providing virtual care can support and validate the adherence of assessments and documentation to regulatory standards, reducing the chances of penalties or delays in reimbursements, which will help with compliance and strengthen the facility's financial stability.

Virtual nursing also offers an opportunity to improve patient education and engagement. Through virtual education sessions, patients and their families will receive ongoing updates about new diseases, medical interventions, and medications in a more accessible and individualized manner from members of the virtual care team without pulling a critical team member from their floor duties. This extended interaction fosters a deeper understanding of treatment plans and empowers patients to participate actively in their care.

By offering additional support layers, virtual nursing care will help residents better manage their health, reduce hospital readmissions, and improve overall quality of life.

IMPACT OF GENERATIVE ARTIFICIAL INTELLIGENCE

Virtual nursing and generative AI have emerged as two distinct but complementary approaches to supporting high-quality nursing practice and care across all aspects of the care delivery system, and as the accuracy and performance of AI improves, the integration of AI into virtual care will expand. Nurses who provide virtual care connect with patients and direct care staff through communication technology platforms embedded in patient rooms and devices, and as for the nurses delivering in-person care, these technologies and wearables will increasingly offer reductive analytics, clinical decision, and diagnostic support. Notably, AI-powered virtual care allows for solutions that automate repetitive, time-consuming activities like rounding, patient education, and post-discharge follow-up, which represents a specific example of how AI can support nursing practice in acute care.

These AI tools reduce workload intensity and fatigue for direct care nurses, enhance operational workflows, and enable top-of-license nursing practice. By integrating AI-powered solutions into virtual care programs, organizations can also support care with expanded patient reach and accessibility through multi-lingual, multi-modal capabilities. Notably, AI-driven escalation pathways optimize care coordination by directing critical needs to patients and virtual staff, ensuring timely follow-through and enhanced patient safety. This combination of virtual nursing care and AI empowers organizations to improve operational efficiency, address staffing challenges, and elevate patient satisfaction, experience, and engagement while maintaining the empathy and connections that are central to nursing care.

Future-proofing care delivery models through pilots that evaluate the deployment of virtual nursing and AI solutions is essential. A well-designed virtual care program that leverages AI-powered tools to enhance clinical efficacy and fiscal outcomes, while ensuring patient-centered care is delivered at scale, is essential. Sharing the results of virtual nursing and AI pilots to build a national database is critical to advancing this field. Equally important is the early and continual involvement of nurses in the design, implementation, and continuous improvement of these models, upholding the core tenets of professional nursing practice while ensuring quality care.

PRINCIPLES OF VIRTUAL NURSING

Principle 1: Nurses are accountable for providing virtual care consistent with standards of professional practice with clear role delineation within the care team. Nurses should ensure that care is evidence-based, safe, high-quality, and person-centered.

Principle 2: Virtual nursing care must be grounded in the ANA Code of Ethics to ensure that all patients are treated with dignity, respect, and cultural humility. Nurses engaging in virtual care should recognize and address patients' individual characteristics, needs, and circumstances, inclusive of a cultural perspective to address health inequities.

Principle 3: Nurses engaging in virtual care should validate the patients' and families' understanding of virtual care and advise them of their rights and responsibilities.

Principle 4: Nurses engaging in virtual care are responsible for working within their scope of practice and knowledge while maintaining competence and recognizing variations in nursing practice standards across facilities, states, territories, and countries.

Principle 5: Nurses engaging in virtual care are subject to board oversight and applicable geographically based healthcare, commerce, fraud, and abuse laws comparable to in-person care.

Principle 6: Virtual nursing care should improve access to quality care, be appropriate to patient needs, location, and care setting, and ensure ease of use for patients and care team members.

Principle 7: Nurses should ensure that virtual care delivery is safe, high-quality, and person-centered; coordinated with patients, families, and the care team; and informed by evolving evidence and best practices to ensure optimal patient outcomes.

Principle 8: Nurses engaging in virtual care should build trust, enhance patient outcomes by following the nursing process, maintain a therapeutic nurse-patient relationship, ensure appropriate and timely transitions in care, and effectively collaborate with the healthcare team.

Principle 9: The use of virtual technologies must be compliant with standards of safety, privacy, and security, as well as standard practices for pertinent patient information.

Principle 10: Nurses engaging in virtual care should ensure the safe transmission of health information and communications to reduce the risk of unauthorized breaches of information.

Principle 11: Nurses engaging in virtual care should document in accordance with institutional standards and policies applicable to all other patient encounters.

Principle 12: Evidence from research, including continuous quality improvement, should be leveraged to advance virtual nursing care guidelines and best practices. Ongoing nursing research is needed to measure the impact of virtual care on quality outcomes and inform and evolve virtual nursing.

Principle 13: Policies governing and supporting the advancement of virtual nursing practice should be updated and modernized to allow for contemporary use, integration, broader adoption, reimbursement, and overall sustainability.

GLOSSARY

asynchronous technology
An exchange of information regarding a patient that does not occur in real-time, including the secure collection and transmission of a patient's medical information, clinical data, clinical images, laboratory results, or a self-reported history (ATA, 2022).

synchronous technology
An exchange of information regarding a patient in real-time (ATA, 2022).

care team
The care team integrates a system perspective with the inclusion of the patient, members of the patient's support team, clinicians, applicable healthcare professionals, and other partners who focus on defining and updating the plan of care, overseeing its successful implementation, and evaluating and reporting about outcomes.

remote technology
Remote monitoring of a patient's vital signs, biometric data, or other objective or subjective data by a device that transmits such data electronically to a healthcare practitioner (ATA, 2022).

virtual care
A mode of delivering healthcare services through the use of telecommunications technologies, including but not limited to asynchronous technology, synchronous technology, and remote patient-monitoring technology, delivered by a healthcare practitioner to a patient or to another practitioner at a different physical location than the healthcare practitioner (ATA, 2022).

virtual nurse
A licensed nurse serving in a location different from where in-person care is being delivered (i.e. room, floor, building or community) in support of the nurse providing in-person care. Both nurses work in collaboration to deliver patient care and monitor the care environment (Gregory, 2024).

virtual nursing
Virtual nursing is leveraging remote technology and tools to provide safe and quality patient care through the application of the nursing process by emphasizing communication, compassion, and collaboration throughout the continuum of care.

virtual nursing care delivery model
A healthcare approach that leverages technology with remote observation and communication to provide patient care, monitoring, and support (Gregory, 2024).

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