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Center for Ethics and Human Rights Advisory Board
American Nurses Association
8515 Georgia Ave # 400
Silver Spring, MD, 20910

Submitted electronically at: https://fs30.formsite.com/ANA_NursingWorld/dhk9diivkt/index.html and to

ethics@ana.org

Dear Members of the American Nurses Association (ANA) Center for Ethics and Human Rights Advisory Board:

Thank you for the opportunity to provide comments on the proposed position statement on the Ethical Use of Artificial Intelligence in Nursing Practice.

The Alliance for Nursing Informatics (ANI), cosponsored by AMIA & HIMSS, advances nursing informatics leadership, practice, education, policy and research through a unified voice of nursing informatics organizations. We transform health and healthcare through nursing informatics and innovation. ANI is a collaboration of organizations that represents more than 20,000 nurse informaticists and brings together 25 distinct nursing informatics groups globally. ANI crosses academia, practice, industry, and nursing specialty boundaries and works in collaboration with the more than 4 million nurses in practice today. We have reviewed the proposed position statement and we offer our comments as nursing informatics stakeholders.

ANI fully endorses the importance of ethical guidance for nurses on the use of artificial intelligence (AI) and other advanced technologies. In previous statements and positions, ANI has advocated for ethical considerations in health information technology policy and practice, emphasizing inclusivity in policy language, transparency, and person-centeredness. Therefore, ANI applauds the advisory board for embarking on the important task of drafting this position statement, which has the potential to be highly impactful for healthcare policy and practice. We also realize that the position statement is focused on ethical guidance, not technology guidance.

We strongly recommend substantial revisions to the current draft. ANI offers **four overarching recommendations** for improvement to the ANA Center for Ethics and Human Rights Advisory Board:

1. **Engage nursing informatics stakeholders with expertise in advanced technologies in healthcare**

2. **Shift to a paradigm that accounts for the diversity of AI enabled advanced technologies, nursing care and health care settings**

3. **Provide clear, consistent and empirically founded definitions**

4. **Ensure inclusion of important concepts, such as bias, transparency, traceability, reliability, safety, inclusivity, social accountability and the governance of advanced technologies**

Our detailed rationale, and section-specific comments, are included below.

1) Engage nursing informatics stakeholders with expertise in advanced technologies in health care

ANI strongly supports the suggestion, articulated in the position statement, that nurses employ a proactive approach to *"anticipate and evaluate the impact of artificial intelligence on health care"*. ANI has long advocated for engagement with nursing experts across the full systems development lifecycle of all healthcare technology, including its design, development, implementation and evaluation. ANI emphasizes that for an impactful and effective position statement on the ethical use of AI in nursing, it is crucial to engage with nursing informatics stakeholders with relevant domain expertise. Nursing Informaticists are skilled in bridging the lens of the often complex and interdependent ethical, legal and social issues in the use of technology, for the nursing, for patients and family caregivers and communities. Nursing Informatics experts in the field (practice, education, research and policy) could, among other things, help with identifying relevant empirical bases to support the position statement, which we found to be lacking in the current draft. This includes evidence on the various benefits of AI, including improved patient safety, higher quality of care and augmented clinical decision making and share decision making, in addition to adverse and unintended consequences.[1] Nursing informatics experts could also assist with identifying appropriate practical examples and use cases of AI in nursing practice and correct inaccuracies and misconceptions appearing in the draft position statement. ANI offers professional nursing and informatics expertise to the ANA Center for Ethics and Human Rights Advisory Board, and would welcome the opportunity for further collaboration. We are available and interested in contributing to further development of the proposed position statement, as well as supporting future public responses on this important healthcare and nursing issue.

2) Shift to a paradigm that accounts for the diversity of AI enabled advanced technologies, nursing care and healthcare settings

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[1] Robert James Lucero et al., "A Data-Driven and Practice-Based Approach to Identify Risk Factors Associated with Hospital-Acquired Falls: Applying Manual and Semi- and Fully-Automated Methods," *International Journal of Medical Informatics* 122 (February 2019): 63–69, https://doi.org/10.1016/j.ijmedinf.2018.11.006; Sarah Collins, "How Extra Nursing Notes Point to Deterioration," *Nursing Times* 110, no. 22 (June 28, 2014): 19–20; Dawn Dowding, "Using Computerised Decision-Support Systems," *Nursing Times* 109, no. 36 (September 11, 2013): 23–25; Karen A. Monsen, Arindam Banerjee, and Puja Das, "Discovering Client and Intervention Patterns in Home Visiting Data," *Western Journal of Nursing Research* 32, no. 8 (December 2010): 1031–54, https://doi.org/10.1177/0193945910370970; Kenrick D. Cato, Walter Bockting, and Elaine Larson, "Did I Tell You That? Ethical Issues Related to Using Computational Methods to Discover Non-Disclosed Patient Characteristics," *Journal of Empirical Research on Human Research Ethics: JERHRE* 11, no. 3 (2016): 214–19, https://doi.org/10.1177/1556264616661611; Kenrick D. Cato et al., "Electronic Surveillance of Surgical Site Infections," *Surgical Infections* 18, no. 4 (June 2017): 498–502, https://doi.org/10.1089/sur.2016.262; Maxim Topaz et al., "Mining Fall-Related Information in Clinical Notes: Comparison of Rule-Based and Novel Word Embedding-Based Machine Learning Approaches," *Journal of Biomedical Informatics* 90 (2019): 103103, https://doi.org/10.1016/j.jbi.2019.103103; Susan McBride et al., "Statewide Study to Assess Nurses' Experiences With Meaningful Use-Based Electronic Health Records," *Computers, Informatics, Nursing: CIN* 35, no. 1 (January 2017): 18–28, https://doi.org/10.1097/CIN.0000000000000290.

As written in the position statement, "*AI in health care encompasses a wide range of existing, emerging, and future technologies".* AI techniques have been embedded in healthcare since the mid-twentieth century, and are currently applied in a variety of ways in health science research and clinical practice.[2] ANI finds that the proposed position statement, as written, does not account for this diversity in AI techniques and advanced technologies. The practical examples provided in the position statement seem to present AI techniques as stand-alone applications that a nurses chooses to deploy or not deploy in a given patient encounter. A large proportion of AI employed in healthcare is embedded in other routinely used medical and health devices and technologies, and in some cases it may not be readily apparent which applications use AI techniques and which do not.[3] Additionally, the profession of nursing and the context of healthcare is growing in complexity.[4] An impactful position statement about the ethical use of advanced technologies needs to take into account the various roles that nurses take on in the context of healthcare across the full care continuum, at any point of care or service.

3) Provide clear, consistent and empirically founded definitions

ANI emphasizes that any guidelines or policies, including ethical guidance, related to healthcare, healthcare technologies, and the access, use and exchange of healthcare data should be driven by evidence. ANI expresses concern at the lack of empirical basis and clarity of definitions for key concepts in the proposed position statement. The concept of AI is poorly defined, inconsistently used, and in some instances conflated with other types of advanced technologies. Similarly the definitions of machine learning, robotics, virtual reality and virtual care are limited, in some cases inaccurate, and lack a strong empirical foundation. Similarly, the TOP Down framework proposed in the position statement is not sufficiently backed by evidence. This lack of clarity and empirical basis is a limitation of the current draft that, if not remedied, could undermine the credibility of the position statement.

4) Ensure inclusion of important concepts, such as bias, transparency, traceability, reliability, safety, social accountability and the governance of advanced technologies

ANI applauds the emphasis on important ethical concepts, such as patient autonomy, privacy and dignity, in the proposed position statement. However, we found that several crucial concepts were omitted or not sufficiently addressed. This includes the concepts of bias, transparency, traceability, and accountability, all of which are key to the analysis of the ethical implication of any healthcare technology.[5] Three additional core principles for consideration are privacy and security, reliability and safety, and fairness and inclusivity.[6]

ANI appreciates the opportunity to offer our comments to advance nursing and the ethical use of healthcare technology, including AI and advanced technologies, with broad ranging implications to the

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[2] Kun-Hsing Yu, Andrew L. Beam, and Isaac S. Kohane, "Artificial Intelligence in Healthcare," *Nature Biomedical Engineering* 2, no. 10 (October 2018): 719–31, https://doi.org/10.1038/s41551-018-0305-z; Fei Jiang et al., "Artificial Intelligence in Healthcare: Past, Present and Future," *Stroke and Vascular Neurology* 2, no. 4 (December 1, 2017): 230–43, https://doi.org/10.1136/svn-2017-000101.

[3] Daniel Schönberger, "Artificial Intelligence in Healthcare: A Critical Analysis of the Legal and Ethical Implications," *International Journal of Law and Information Technology* 27, no. 2 (June 1, 2019): 171–203, https://doi.org/10.1093/ijlit/eaz004; Yu, Beam, and Kohane, "Artificial Intelligence in Healthcare"; Jiang et al., "Artificial Intelligence in Healthcare."

[4] Arlene W. Keeling, "Historical Perspectives on an Expanded Role for Nursing," *Online Journal of Issues in Nursing* 20, no. 2 (May 31, 2015): 2.

[5] Osoba, Osonde A. and William Welser IV, An Intelligence in Our Image: The Risks of Bias and Errors in Artificial Intelligence. Santa Monica, CA: RAND Corporation, 2017. https://www.rand.org/pubs/research_reports/RR1744.html.

[6] Molly K McCarthy, "Artificial Intelligence in Health: Ethical Considerations for Research and Practice," HIMSS, June 17, 2019, https://www.himss.org/artificial-intelligence-health-ethical-considerations-research-and-practice.

health of the US population. We are available and interested in supporting and collaborating on further development of the position statement, as well as future public responses on these important healthcare issues.

Sincerely,

Susan Hull, MSN, RN-BC, NEA-BC, FAMIA
ANI Co-chair

Mary Beth Mitchell, MSN, RN, BC, CPHIMS
ANI Co-chair

The Alliance for Nursing Informatics (ANI), cosponsored by AMIA & HIMSS, advances nursing informatics leadership, practice, education, policy and research through a unified voice of nursing informatics organizations. We transform health and healthcare through nursing informatics and innovation. ANI is a collaboration of organizations that represents more than 20,000 nurse informaticists and brings together 25 distinct nursing informatics groups globally. ANI crosses academia, practice, industry, and nursing specialty boundaries and works in collaboration with the more than 4 million nurses in practice today. Contact ANI.

Section-specific comments:	
Lines 1-12 Purpose	ANI supports the purpose to *"to provide nurses with ethical guidance on the use of artificial intelligence (AI) and other advanced technologies in health care."* However, we encourage the revision of this section to clarify the definition of AI.
Lines 14-25 Statement of ANA	ANI strongly agrees that *"appropriate use of artificial intelligence (AI) in nursing practice supports and enhances the core values and ethical obligations of the profession."* We endorse the role of nurses in evaluating the impact of artificial intelligence and remaining informed to the extent appropriate to their education, training and experience. Further, we advocate for the inclusion of nurses as full partners at all stages of systems design, development and implementation, as well as nursing leadership in healthcare technology development, policy, research and practice.
Lines 27-38 Code of Ethics for Nurses	ANI highly supports alignment with the provisions quoted from the Code of Ethics for Nurses. In addition, ANI highlights other provisions relevant to the topic. For example, Provision 3 highlights professional responsibility in promoting safety, with special emphasis on reducing and reporting any errors and near misses. Provision 4 emphasizes the obligation to "*provide optimal care.*"[7] Evidence suggests that AI can reduce errors, improve safety and support the optimization of care.[8] With this in mind, ANI cautions against a narrow focus on the ethical threats of AI, and encourages further consideration for the ethical benefits of AI.
Lines 40-63 Background	ANI encourages revisions to clarify definitions and ensure a strong evidence-base for this section.
Lines 64-89 Framework	ANI encourages the use of an empirically founded framework. Additionally, we encourage a broader emphasis on quality of outcomes, rather than the narrower focus of whether a given technology increases or decreases care opportunities or patient autonomy.
Lines 91-128 Machine Learning Lines 130-160 Robotics Lines 162-184 Virtual Reality Lines 186-211 Virtual Care	ANI strongly advises substantial revisions of the section in lines 91 through 211, collaboration with nursing informatics experts. These sections contain several inaccuracies and omissions. Examples include the following: • The statement that machine learning requires additional data entry by nurses is misleading. A majority of machine learning applications utilize data that is routinely collected in the process of care. • The inclusion of virtual reality and virtual care as subtypes of AI is questionable without further justification.

[7] American Nurses Association, *Code of Ethics for Nurses with Interpretive Statement* (Silver Spring, MD: American Nurses Association, 2015).
[8] D. Douglas Miller and Eric W. Brown, "Artificial Intelligence in Medical Practice: The Question to the Answer?," *The American Journal of Medicine* 131, no. 2 (February 1, 2018): 129–33, https://doi.org/10.1016/j.amjmed.2017.10.035.

	• The use of AI in nursing and population health research, and nursing education and training, is omitted.
Lines 213-229 Access, Justice, and Unintended Consequences	ANI strongly supports the emphasis on justice and equity in access to technologies. We encourage a balanced view of the benefits and burdens of AI and other advanced technologies, rather than narrowly focusing on threats and unintended consequences.
Lines 231-245 Recommendations	ANI endorses the need for nurses to be included and involved in the development and consideration of AI, as well as the importance of continuing education and training. However, we find that several of the recommendations are excessively broad, not adequately supported by the preceding sections, and lack an empirical foundation. ANI offers professional nursing and informatics expertise and would welcome the opportunity to collaborate on further development of these recommendations.
Lines 247-307 References	ANI encourages a strong empirical basis for the position statement, to be reflected in the references.