POSITION STATEMENT ON ARTIFICIAL INTELLIGENCE

Introduction

The American Society of PeriAnesthesia Nurses (ASPAN) has the responsibility for defining the principles of safe, quality nursing practice in the perianesthesia setting. As the premier organization for perianesthesia nursing practice, ASPAN defines safe care for patients in the setting of emerging advances in healthcare innovations. ASPAN sets forth this position statement to promote awareness of artificial intelligence and its implications for ongoing scientific and technological advancements.

Background

In the past 10 years, spending on health technology and digital health nearly doubled (180%), while investments in pharmacological therapies and biotechnology more than doubled (230%).[1] Historically, the incorporation of artificial intelligence (AI) into educational systems dates to the 1950s.[2,3] AI later gained greater recognition in the 1970s and 1980s during the advent and expansion of enhanced computer designs and functions. During this time, AI entered healthcare to improve diagnostic accuracy and clinical outcomes. Since 2014 the field of science surrounding AI has witnessed both profound and significant advancements in its application

Contemporary visionaries recognize the potential that AI has to revolutionize nursing and healthcare.[4]

Many countries are implementing artificial intelligence (AI) technologies that have been developed, tested, and evaluated for use in healthcare.[5] Currently, AI plays a strategic role in multiple aspects of nursing practice. AI has been widely integrated into nursing curricula and continuing education contexts, supporting the development of critical thinking and clinical decision-making skills. In nursing education, the creation and application of realistic, AI-driven clinical scenarios and simulations enhance student engagement and deepen learning.

Students exposed to AI-based learning environments often report reduced stress during clinical experiences, as these technologies provide a stable and risk-free environment for skill development and confidence building.[4,6,7,8]

In addition to advancing nursing education, artificial intelligence enhances workflow optimization through advanced monitoring and reliable data processing that support accurate nursing diagnoses and the development of predictive care models. (e.g., sepsis, patient deterioration indexes). Rapidly evolving wearable devices allow timely identification and alerting of physiological changes. (e.g., continuous glucose monitoring systems, electrocardiogram screening applications for smartphones). The adoption of AI protocols has greatly improved clinical care delivery. Many clinical decision support systems are designed to produce early detection and warning systems for rapid patient assessment and intervention.[4,6,8,9,10,11] Similar artificial intelligence applications are transforming anesthesia care through the use of predictive models, risk stratification tools, continuous intraoperative hemodynamic monitoring, and data-driven optimization of team and resource management.[12]

Leadership and operational management have implemented AI as a tool to support optimal staffing and patient scheduling.[13,14] AI applications that automate administrative and non-clinical functions have the potential to decrease nursing workload, enhancing efficiency, and increasing the time available for patient interaction.[4,6,14]

AI can also expand the capacity of data storage which promotes ease of access to well-organized data.[5] The use of AI robots to deliver supplies, specimens, and medications provides efficient and timely services.[1] Reported studies have shown that between 8% and 16% of nursing time is spent on non-clinical tasks which AI robots can give back to nurses.[9]

Research and diagnostic programs have advanced significantly through the integration of AI. AI technology allows for the assimilation of massive volumes of data that can be quickly analyzed to identify patterns for predictive and diagnostic medicine.[15,16] This ability has supported public health surveillance as well as disease screening.[14,16] In the field of diagnostics, AI enhances the quality, speed, and accuracy of imaging which enables rapid detection of abnormalities, quantifies the progression of disease, and using evidence-based protocols assesses treatment responses.[11]
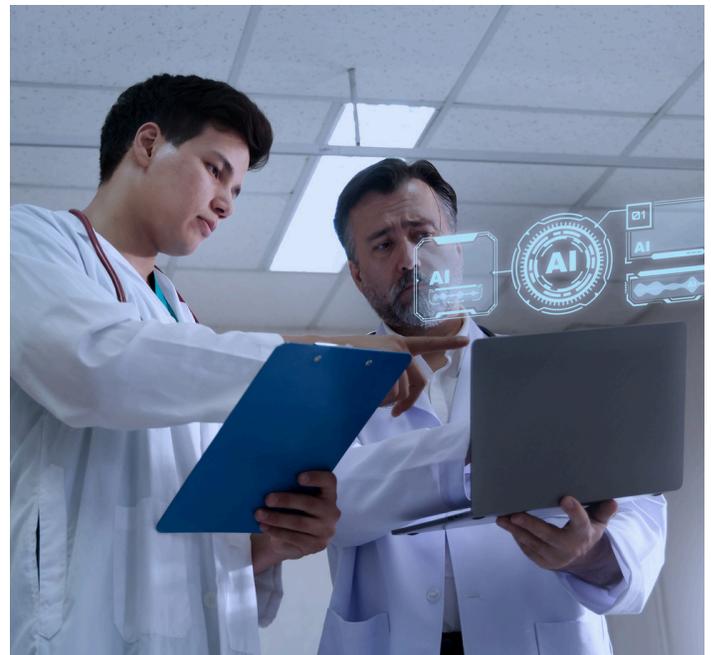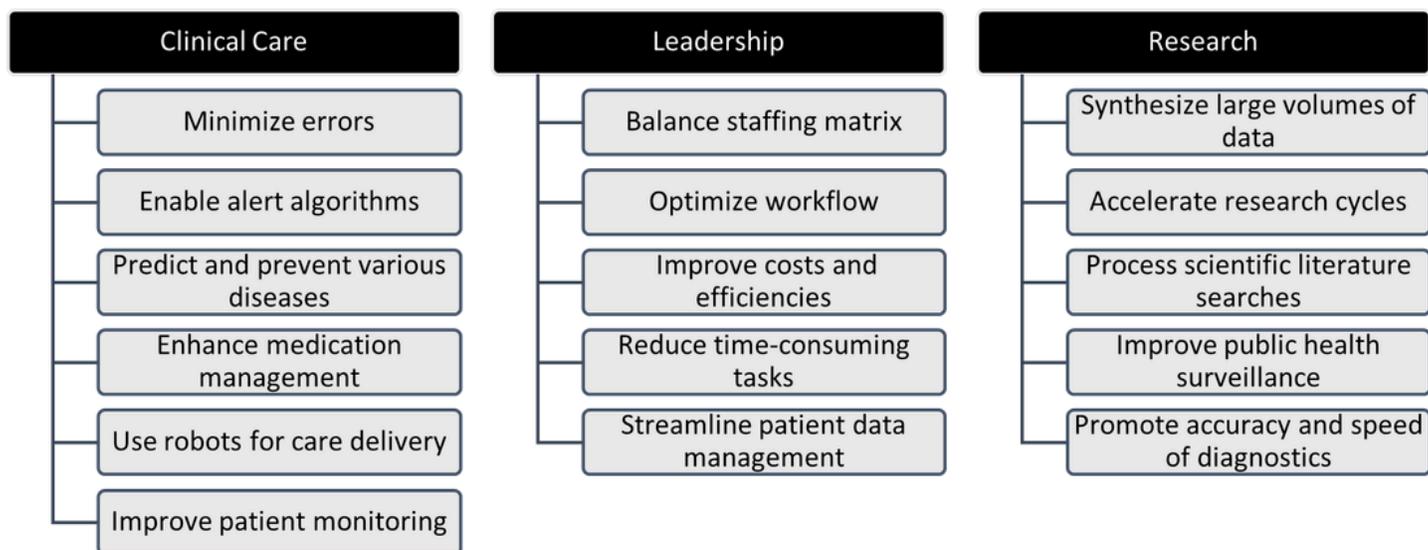
Figure 1: Summary of AI benefits.[1-17,21,22]

Clinical Care	Leadership	Research
Minimize errors	Balance staffing matrix	Synthesize large volumes of data
Enable alert algorithms	Optimize workflow	Accelerate research cycles
Predict and prevent various diseases	Improve costs and efficiencies	Process scientific literature searches
Enhance medication management	Reduce time-consuming tasks	Improve public health surveillance
Use robots for care delivery	Streamline patient data management	Promote accuracy and speed of diagnostics
Improve patient monitoring		

While AI is now globally prevalent, challenges related to its use and integration continue to exist. Key concerns surrounding AI include ethical, security, and privacy issues, concern for hackers, and the absence of common standards to address the moral and legal use of AI (e.g., determining accountability when AI contributes to an adverse event).[5,20] AI accuracy relies on high-quality, representative data, yet algorithmic bias can occur when certain racial or gender groups are underrepresented.[3,5,11,17,20] Implementation of AI requires additional training and education for accurate utilization of the AI tools.

Interoperability and the appropriate infrastructure (e.g., computers, monitors) are also challenging given the variety of healthcare platforms that currently exist.[12]
There is growing concern for use of AI in scholarly activities. In addition to the potential for bias, AI used for scholarly writing can hallucinate resulting in inaccurate content with fictitious references or even misinterpretation of content of the publications cited.[18,19] Many universities and colleges have recognized the potential positive and negative consequences of students' use of AI and the impact on academic integrity. These concerns have resulted in guidance and policies for cases when students use AI to write papers ranging from disciplinary action to dismissal.[23] Higher education concerns include AI inaccuracies but also the reduction in students developing writing and scholarly skills that are crucial for successful professionals post-graduation.[24] Peer review journal editors and peer reviewers are also challenged with identification of submitted manuscripts that used AI and references that have been retracted or hallucinated by AI. This has led to exploration of guidance for authors, editors, and peer reviewers to ensure the scientific integrity of publications.[25]

Furthermore, AI is not intended to replace the critical thinking and clinical interventions of healthcare providers. Some critics express concern for the potential for AI to replace humans.[15,17,26] AI serves as a complement, not a substitute, for human judgment and empathy. AI is incapable of providing compassion, empathy, and necessary human connectedness. Although a recognized limitation of AI, many continue to argue that the art and science of caring is depersonalized by AI robots. Naysayers adhere to the belief that technology will ultimately have an adverse effect on the patient and the staff experience.[17]

Position

ASPAN is highly committed to support the advancement of technology, including the application of AI in clinical perianesthesia practice settings, for the patient, family, perianesthesia nurses, members of the healthcare team, and global community. Perianesthesia registered nurses will explore and embrace the following recommendations:

- Increase awareness of the impact of artificial intelligence on nursing practice and healthcare
- Participate in the creation and implementation of AI technologies (e.g., robots designed for patient care)
- Advocate for responsible and ethical use of AI (e.g., strong security and privacy protocols)
- Contribute to evidence-based education related to the implications of AI in the healthcare setting
- Support research related to ongoing development and investigation of AI tools (e.g., ease of use, benefit to patient outcomes)
- Endorse institutional efforts to advance technological innovation within the healthcare environment

Expected Outcomes

Perianesthesia registered nurses will familiarize themselves with this position statement and will develop an awareness of benefits and challenges associated with the implementation of AI in the healthcare setting. Perianesthesia nurses will partner with interdisciplinary experts to design and evaluate AI tools that support safe, evidence-based care.

Definitions – See Table 1

Table 1*: Definitions related to artificial intelligence.

Term	Definition
Artificial intelligence (AI)[8,9,22]	Programming of machines to simulate human intelligence including the processing of data to both learn and implement new knowledge to achieve certain objectives; group of technological approaches; also recognized as cognitive technology
Bot2	Software program created to perform tasks that are automated, similar to human behavior
Chatbots[3]	Software program created to imitate human communication through text or voice, often used for tasks such as customer support or automated phone calls
ChatGPT[2]	Generative pre-trained transformer (GPT), a language software model that generates human-like texts
Clinical Decision Support Systems (DSS)[3]	Programs that provide automated data analysis, recognition of patterns within data, and offer options for treatment planning
Deep learning (DL)[9]	Subset of machine learning which involves complex algorithms inspired by the intricate neural function of the human brain

Table 1*: Definitions related to artificial intelligence continued

Term	Definition
Machine learning (ML)[5,9,22]	Component of AI that can be programmed to identify patterns in data and make predictions or decisions based on those patterns
Natural Language Processing (NLP)[5,22]	Component of AI that enables software to understand, interpret, and generate human language (e.g., search engines, virtual assistants that will answer questions)
Rule-based Expert Systems (RBES)[21]	Software programs that solve problems using 'if-then' rules similar to human decision-making
Robotic Process Automation (RPA)[22]	The use of robots programmed through software to perform repetitive and routine tasks

This table was generated by Microsoft 365 Copilot, an AI support designed to generate texts and images.

Approval of Statement

This position statement was endorsed by a vote of the ASPAN Board of Directors on November 30, 2025, and approved by a special vote of the ASPAN Representative Assembly on February 13, 2026.

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