Nurse Spotlight: Artificial Intelligence and Implications for Nursing Practice

Nurses Service Organization (NSO), in collaboration with CNA, has published our **Nurse Professional Liability Claim Report: 5th Edition**. It includes statistical data and case scenarios from CNA closed claim files, as well as risk management recommendations designed to help nurses reduce their malpractice exposures and improve patient safety.

You may access the complete report, and additional Risk Control Spotlights, at: www.nso.com/nurseclaimreport.

This Nurse Spotlight focuses on an emerging topic in nursing: **Artificial Intelligence (AI) and Implications for Nursing Practice.**

Overview

Artificial Intelligence (AI) – a term encompassing technological concepts such as machine learning, pattern recognition, natural language processing, robotics and neural networks designed to replicate human thought processes – has become a driving force within healthcare. With its potential to enhance diagnostics and treatment, streamline administrative and operational processes, and engage patients in innovative preventive care programs, the integration of AI continues to transform patient care outcomes.

Currently present in nearly every sector of healthcare, the use of AI may enable healthcare professionals to efficiently analyze complex data, gain key insights for clinical situations, render evidence-based treatment decisions and enhance care planning. From clinical decision support and documentation assistance to patient monitoring and predictive analytics, AI enabled technologies are reshaping how nurses assess patients and provide treatment. While these tools offer potential benefits in efficiency and safety, they may also introduce new clinical risks and associated professional liability (PL) exposures

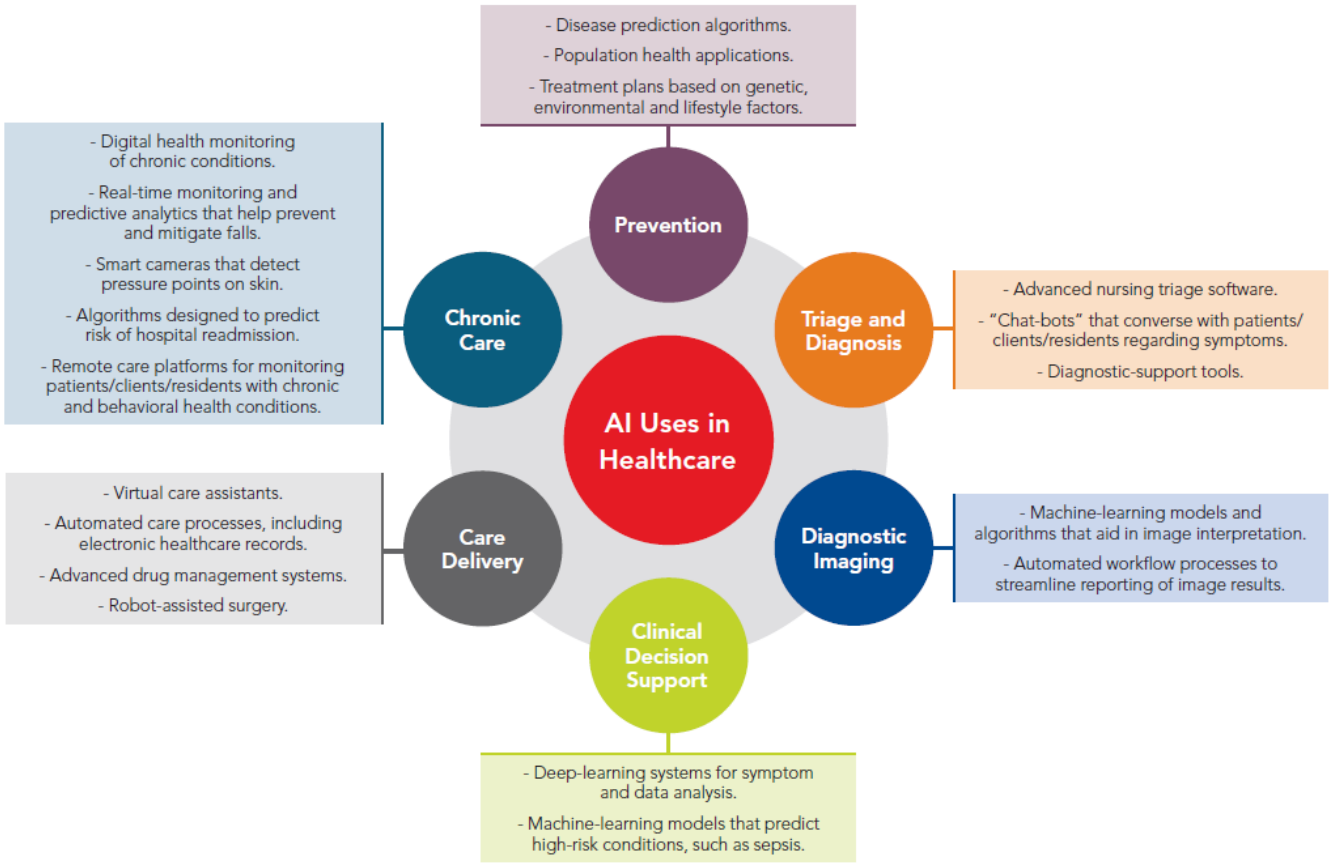
For additional information about the evolving AI technology see the CNA/NSO Vantage Point® publication.

Clinical Applications

Many AI-powered technologies are currently in use and are influencing clinical, operational and administrative aspects of healthcare. The diagram below illustrates the breadth of current AI tools and their applications, highlighting that predictive analytics play a role across all areas of AI use in healthcare.

AI enabled clinical decision support (CDS) systems—such as predictive analytics used for early identification of sepsis and hospital acquired infections —are primarily utilized during the assessment and intervention phases of the nursing process. These systems assist nurses by aggregating and analyzing 'big' data from multiple sources— electronic health records (EHRs), physiologic monitoring devices and diagnostic imaging, among others—to inform clinical assessments and interventions. With proper implementation, CDS systems can support more accurate diagnoses, enable tailored treatment planning, and improve individual patient outcomes.

The ability of AI algorithms to identify trends and outliers can enhance clinical planning. Additionally, they can enable increased responsiveness to individual patients and their needs, based upon their utility in analyzing large amounts of information from the EHR expeditiously. AI can also help identify subtle changes in a patient's condition earlier, thus enabling improved patient monitoring.



However, the effectiveness of such systems is contingent on the accuracy and completeness of the underlying data.

One commonly used risk scoring system supported by CDS is the Modified Early Warning Score (MEWS), which incorporates respiratory rate, heart rate, temperature, systolic blood pressure, and level of consciousness to help detect early clinical deterioration. Related tools include the Pediatric Early Warning Score (PEWS) and the Cardiac Children's Hospital Early Warning Score (C CHEWS). Beyond early warning systems, CDS applications are also being used to enhance medication administration safety programs and emergency department (ED) triage.

Medication errors continue to occur across all healthcare settings. Although technologies such as barcode medication administration (BCMA) systems and smart infusion pumps have improved medication safety, the integration of AI within these technologies adds an additional layer of risk mitigation by identifying atypical dosing or patient specific risks that extend beyond standard safety guardrails. These tools are intended to reduce workarounds and support safe practice by supplementing existing medication safety programs.

AI assisted systems are also being utilized to triage patients in EDs. The Emergency Severity Index® (ESI®) is the established gold standard for assigning patient acuity in the ED. While ESI provides a structured framework, triage inherently requires clinical judgment to account for dynamic patient presentation, risk factors, and evolving conditions. A 2025 study published in the New England Journal of Medicine found that "harmonizing AI enabled clinical decision support tools with registered nurse (RN) judgment was associated with improved triage accuracy and improved patient throughput." While emerging evidence suggests potential benefits of AI-enabled CDS, it is critical that implementation be approached cautiously, with validation, oversight, and alignment with established clinical standards. It is important to highlight that AI triage technology is intended to complement—not replace—critical thinking of the nurse. This concept is supported by the Emergency Nurses Association (ENA). The ENA *Triage Qualifications and Competency* position statement affirms that "Validated AI and machine learning applications may support the triage process but cannot substitute for the clinical judgment and real time involvement of a qualified triage clinician." AI tools should not independently assign acuity levels or replace standardized triage education and competency validation.

In addition to applications for clinical assessment and intervention, AI is increasingly being incorporated into programs designed for patient education. This technology offers several advantages, including expanded access for patients in rural or underserved areas, tailored educational content aligned with individual literacy levels, greater patient engagement, and improved adherence to treatment plans. Common applications include AI driven chatbots that deliver on demand explanations of diagnoses, medications, procedures, and discharge instructions, as well as tools supporting chronic disease education. As with all types of AI-enhanced systems for clinical use, there are also risks and limitations. For example, generative AI chatbots may provide incorrect or biased information if not validated on an ongoing basis and there is the potential for patient overreliance on the information resulting in care delays. The availability of AI benefits may also be limited by insufficient access to internet connectivity among patients in rural settings.

Risk/Benefits

AI can help support the earlier identification of high risk conditions, reduce unwarranted variation in clinical decision making, and reinforce evidence based nursing interventions, while also streamlining administrative workflows that contribute to nurse burnout. However, because AI systems depend on large volumes of data for training and ongoing learning, data integrity represents one of the field's most significant vulnerabilities. Training datasets should be transparent, enabling users to understand the academic or proprietary databases, peer reviewed literature, clinical guidelines, research findings, and other information sources used to develop and validate AI models. The table below outlines common data and process related risks associated with AI implementation, along with their potential implications.

Data Inaccessibility	Data or Outcome Bias	Data Breach	Black-box Reasoning	Automation Bias
Clinical AI tools depend upon the ability to funnel diverse types of information into a single database, which often requires a sophisticated IT infrastructure and a high level of staff expertise.	AI platforms can be undermined by incompatible, inaccurate, obsolete or less-than-inclusive data. Bias may also arise when outdated data fail to reflect changes in patient/client/resident disease patterns or demographics.	AI databases are vulnerable to data breaches and other types of unauthorized disclosures, and require effective security strategies and strictly enforced rules governing access and utilization.	When providers lack full understanding of how an AI algorithm reaches diagnostic or therapeutic conclusions, it can make it more difficult to detect unwanted outcomes and rectify AI system problems.	Excessive trust in automation can erode clinical decision-making skills and encourage complacency, potentially resulting in providers automatically accepting questionable AI-related care recommendations.

AI systems do carry a risk of incorporating and sustaining human biases into their analysis, which can adversely affect results obtained from them. These biases may be algorithmic or social – that is, due to factors like race, gender, or simply measurement errors – potentially affecting the healthcare outcomes for specific populations. Studies have shown that clinical decision algorithms may perpetuate racial biases by prioritizing care based upon race or ethnicity.

Professional Nursing Liability Exposures

According to the 2025–2026 *American Nurse Journal* Trends Survey, nurses identified key concerns related to AI use in healthcare, such as human interaction limitations (73%), accuracy challenges (70%), and patient safety risks (67%). Despite these concerns, most respondents (76%) acknowledged the potential benefits of AI while stressing the importance of maintaining patient centered, human focused care.

The full scope of nursing professional liability risk associated with AI remains uncertain, as case law evolves and technologies continue to expand. Potential exposures may include, but are not limited to, overriding clinical alerts or warnings, excessive reliance on AI generated recommendations, or failing to act on AI identified risks—any of which may be characterized as a departure from the nursing standard of care in the context of a professional liability claim. It is also important to recognize that AI outputs and related documentation may be discoverable when AI tools are used in a patient's care.

AI has the potential to enhance efficiency and patient safety in professional nursing practice; however, potential professional liability exposure may evolve when there is a failure to exercise independent nursing judgment and critical thinking. For example, AI may produce content that appears credible but is inaccurate or unsupported, known as "hallucinations." If such outputs are used to treat patients or develop patient education materials, there is a risk that patients could receive misleading information or inappropriate care. Nurses should critically evaluate AI-generated content, validate it against trusted clinical sources, and ensure it aligns with current standards of care before utilizing it in patient care or incorporating it into patient education. There is also the risk of nursing deskilling which results from an overreliance on automated systems deferring to CDS outputs with less utilization of critical thinking.

Mitigating AI-associated risks is reliant on consistent use of professional nursing judgment, recognition of the limitations of AI technology, adherence to protocols regarding validation and implementation and comprehensive documentation. AI technology should be viewed as a supplemental patient safety tool that can be used to enhance and supplement critical thinking, nursing expertise and individualized patient care.

Risk Control Recommendations for Nurses

- ***Participate in ongoing education and remain actively engaged in the implementation, monitoring, and evaluation of AI enabled technologies,*** recognizing that frontline nursing input is critical to effective adoption, adherence and competency.
- ***Recognize that that AI enabled tools are designed to support—not replace—professional nursing judgment and clinical expertise*** and that overreliance on technology may negatively impact patient-centered care. CDS recommendations should be treated as an additional source of information to inform nursing care, as noted in the guidance from the 2025 American Nurses Association (ANA) code of Ethics for Nurses. (Provision 7.5)
- ***Adhere to established protocols and avoid workarounds*** when using technology. Deviations from standardized processes are frequently cited as contributing factors in adverse events.
- ***Avoid bypassing safety alerts without appropriate review*** or entering inaccurate data to suppress prompts.
- ***Ensure that AI generated alerts and recommendations are evaluated with respect to the patient's clinical condition***, recognizing that CDS tools may not account for subtle, nuanced, or rapidly evolving changes in patient condition.
- ***Document the clinical rationale for deviating from a CDS recommendation***, including the reasons the recommendation was determined to be inappropriate for the patient.
- ***Ensure that AI-assisted documentation is comprehensive and reflects critical thinking, clinical reasoning and decision-making.*** An objective, complete patient healthcare information record is integral to providing quality patient care, ensuring consistent communication among clinicians and establishing the basis for an effective defense in the event of litigation.

Risk Control Recommendations for Nurse Leaders

- ***Conduct organization-wide analyses with multidisciplinary stakeholders to evaluate, vet and approve proposed AI applications*** used in nursing practice, including those suggested by independent contractors, and consider introducing new technology through small scale pilot programs which foster feedback from frontline nurses. Include an analysis of potential data bias in the vetting process.
- ***Establish protocols to validate and ensure authenticity of AI generated content for patient education,*** cross-referencing it with authoritative clinical guidelines, verifying the accuracy of recommendations and assessing for "hallucinations" or unsupported guidance. Evaluate the content for clarity, health literacy, and appropriateness for the target patient population, while ensuring alignment with organizational policies and industry standards.
- ***Include AI training in ongoing nursing education programs*** allowing opportunities to ask questions and participate in simulation exercises.
- ***Develop and implement policies governing the use of AI enabled technologies.*** Consider utilizing Failure Mode Effect Analysis [FMEA] exercises prior to launching new AI-enabled technology.
- ***Conduct ongoing audits of AI system outputs*** and incorporate AI related adverse events into existing incident reporting processes to support monitoring, trend analysis, and risk mitigation.

Nurse Spotlights

For risk control strategies related to:

- Protecting Your License
- Documentation
- Artificial Intelligence
- Technology in Nursing
- Liability for Charge Nurses
- Well-being and Mental Health

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This information is designed to help nurses evaluate risk control exposures associated with their current practice. It is not intended to represent a comprehensive listing of all actions needed to address the subject matter, but rather is a means of initiating internal discussion and self-examination. Your clinical procedures and risks may be different from those addressed herein, and you may wish to modify the tool to suit your individual practice and patient needs. The information contained herein is not intended to establish any standard of care, serve as professional advice or address the circumstances of any specific entity. These statements do not constitute a risk management directive from CNA. No organization or individual should act upon this information without appropriate professional advice, including advice of legal counsel, given after a thorough examination of the individual situation, encompassing a review of relevant facts, laws and regulations. CNA assumes no responsibility for the consequences of the use or nonuse of this information.

This information was excerpted from NSO and CNA's full report, *Nurse Professional Liability Exposure Claim Report: 5th Edition.*

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