



INNOVATION ADVISORY COMMITTEE

Data Science, Artificial & Augmented Intelligence

Vision

Vision: Widely disseminate data science and AI knowledge to advance nursing data stewardship, advanced analytics, and advocate for its safe and equitable use to support nursing practice and care delivery. Accelerate the discover of new insights from healthcare and nursing data sets that enable automation to optimize care delivery, research, and academia.

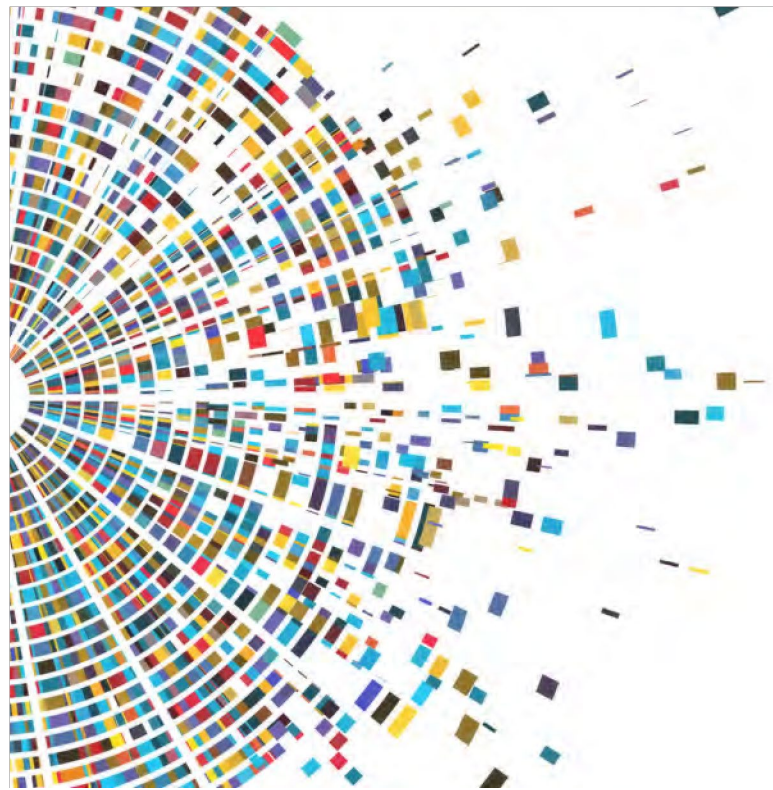
Purpose: The committee aims to provide the best, leading-edge, beneficial, and timely resources to equip all nurses with data science and artificial and augmented intelligence knowledge to optimize clinical and operational efficiencies and improve the nurse experience, people, and population outcomes.

Call to Action: It is imperative nurses have a voice in the discovery, development, and deployment of data science, artificial and augmented intelligence products in health care. As patient advocates, and the most trusted profession, we need to ensure the highest standards for the safe, ethical, and equitable use of this technology. It is time to take a bold step forward and advance the role of the nursing community in advancing this cause.

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In compiling these innovation resources our goal was to ensure unique information across all eight resource guides and to avoid redundancy. You may find additional content around **Data Science Artificial & Augmented Intelligence** (Data Science AI2) in the general resource guide. We thank the Data Science AI2 committee for contributing content to advance nurse-led innovation.



General resources

General Resources

- WHO Digital Health Worker - Florence [[🔗 website](#)]
- Why Nurses Are Key to a Strong IT Strategy [[🔗 article](#)]
- Digital Innovation in Nursing - Nurses Week 2021 [[🔗 video](#)]
- Data Science Terms [[🔗 google sheet](#)]

Data Repositories

- Broad Institute [[🔗 website](#)]
- Census Bureau [[🔗 website](#)]
- CDC Data Statistics [[🔗 website](#)]
- Health Data [[🔗 website](#)]
- Healthy People 2030 Data Set [[🔗 website](#)]
- Medicaid & CHIP Open Data [[🔗 website](#)]
- Medicare Claims Data [[🔗 website](#)]
- NASA Planetary Data System [[🔗 website](#)]
- NASA Earth Data Sets [[🔗 website](#)]
- National COVID Cohort Collaborative (N3C) [[🔗 website](#)]
- NIH Cancer Statistics [[🔗 website](#)]
- NHS Data [[🔗 website](#)]
- Open Science Data Cloud [[🔗 website](#)]
- Project NELL [[🔗 website](#)]
- U.S. Bureau of Labor Statistics [[🔗 website](#)]
- WHO Global Health Observatory [[🔗 website](#)]

Government & Legislation

Government

- CDC Healthy People 2030 [[🔗 website](#)]
- FDA Artificial Intelligence and Machine Learning (AI/ML) Enabled Medical Devices [[🔗 website](#)]
- FDA Focus Area Artificial Intelligence [[🔗 website](#)]
- FDA Digital Health Center of Excellence [[🔗 document](#)]
- NAM Artificial Intelligence in Healthcare: The Hope, Hyper, Promise, and Peril [[🔗 website](#)]
- Office of the National Coordinator for Health Information Technology [[🔗 website](#)]
- WHO Global Report on AI [[🔗 website](#)][[🔗 press release](#)]
- Ethics & Governance of Artificial Intelligence for Health [[🔗 website](#)]

Legislation & Policy

- Blueprint for AI Bill of Rights [[🔗 website](#)]



Universities & Academia

Universities & Academia

- Columbia School of Nursing Q&A: Artificial Intelligence and Nursing [[🔗 website](#)]
- MIT AI for Healthcare and Life Sciences [[🔗 website](#)]
- University of Florida Health Artificial Intelligence [[🔗 website](#)]
- Vanderbilt Data Science [[🔗 website](#)]
- Vanderbilt School of Engineering: Computing and AI for Health, Medicine, and Surgery [[🔗 website](#)]



Websites

Websites

- [ChatGPT Glossary \[🔗 website\]](#)
- [Kaiser Family Foundation \[🔗 website\]](#)
- [Gartner \[🔗 website\]](#)
- [Nursing Now \[🔗 website\]](#)
- [Nurse.org \[🔗 website\]](#)
- [Nurse Evolution \[🔗 website\]](#)
- [Towards Data Science \[🔗 website\]](#)
- [Quantitative Nurse \[🔗 website\]](#)



Businesses, Non-profits & Programs

Business Organizations, Non-Profits & Programs

- AI Now Institute [[🌐 website](#)]
- AIMED [[🌐 website](#)]
- Artificial Intelligence in Medicine: AI Med [[🌐 website](#)]
- Booz Allen [[🌐 website](#)]
- Deloitte AI in Pharma and Life Sciences [[🌐 website](#)]
- IEEE: The Professional Home for the Engineering and Technology Community Worldwide [[🌐 website](#)]
- Health Catalyst Transform Your Data Into Measurable Value [[🌐 website](#)]
- Health IT Analytics [[🌐 website](#)]
- IBM: What is artificial intelligence in medicine? [[🌐 website](#)]
- ICON: AI and Clinical Trials [[🌐 website](#)]
- Integra [[🌐 website](#)]
- IQVIA AI & Machine Learning with a healthcare IQ [[🌐 website](#)]
- ITIF: Information Technology and Innovation Foundation [[🌐 website](#)]
- LeanTaas Maximize healthcare capacity with AI and prescriptive analytics [[🌐 website](#)]
- Lirio [[🌐 website](#)]
- Microsoft AI for Health [[🌐 website](#)]
- Open AI [[🌐 website](#)]
- Siemens [[🌐 website](#)]
- The Internet of Things: Lot [[🌐 website](#)]

Organizations

Organizations

- American Nursing Informatics Association (ANIA) [[🔗 website](#)]
- American Medical Informatics Association (AMIA) [[🔗 website](#)]
- Health Information Management System Society (HIMSS) [[🔗 website](#)]
- Nurses Improving Care for Healthsystem Elders (NICHE) [[🔗 website](#)]

Conferences

Conferences

- AMIA Annual Symposium [[🔗 website](#)]
- HIMSS Global Health Conference & Exhibition [[🔗 website](#)]
- Nursing Knowledge: Big Data Science Conference [[🔗 website](#)]
- Women in Data Science [[🔗 website](#)]



Education & Books

Education & Training

- [Bootcamp: AI for Healthcare](#) [[website](#)]
- [Education—General Assembly](#) [[website](#)]
- [Education for the Age of AI](#) [[website](#)]
- [Regex Tester](#) [[website](#)]
- [NimbleMiner](#) [[website](#)]
- [BBN Times](#) [[website](#)]

Books

- [Emerging Technologies for Nurses](#) [[book](#)]
- [Nursing Informatics: Scope & Standards of Practice, 3rd Edition](#) [[book](#)]
- [Healthcare Informatics: Strategies for the Digital Era](#) [[book](#)]
- [Nursing and Informatics for the 21st Century - Embracing a Digital World, Book 1](#) [[book](#)]
- [Introduction to Nursing Informatics](#) [[book](#)]
- [Health Informatics: Multidisciplinary Approaches for Current and Future Professionals](#) [[book](#)]
- [Big Data-Enabled Nursing: Education, Research and Practice](#) [[book](#)]
- [Role of the Chief Nursing Informatics Officer \(CNIO\) ANIA](#) [[e-book](#)]
- [Every Nurse an E-nurse](#) [[e-book](#)]
- [The Book of OHDSI](#) [[book](#)]
- [Visual Thinking For Design](#) [[book](#)]



Justice, Equity, Diversity & Inclusion (JEDI)

Justice, Equity, Diversity, and Inclusion

- AHIMA White Paper Identifies Opportunities and Challenges with Collecting, Integrating, and Using Social Determinants of Data Health [[white paper](#)]
- Health Care AI Systems Are Biased [[article](#)]
- How Health Care Leaders Can Build Effective, Bias free AI [[article](#)]
- How to leverage innovation models to achieve health equity: Build. Measure. Share [[article](#)]
- Leveraging AI to Examine Disparities and Bias in Health Care [[website](#)]
- Local climate risk data could enable better decision making by households and policymakers [[blog](#)]
- Women in Data Science [[website](#)]



Journals

Journals

- Catalyst [[website](#)]
- Computer Informatics and Nursing [[website](#)]
- Creative Nursing [[journal](#)]
- Implementation Science [[website](#)]
- International Journal of Medical Informatics [[website](#)]
- MIT Technology Review [[website](#)]
- Online Journal of Nursing Informatics [[website](#)]
- The New England Journal of Medicine [[website](#)]



Articles & Research

AI In Healthcare

- Artificial Intelligence for Health and Health Care [[🔗 report](#)]
- AMIA Position Paper Details Policy Framework For AI/ML-Driven Decision Support [[🔗 website](#)]
- Artificial intelligence: Optimizing patient care in acute and post-acute settings [[🔗 article](#)]
- How blockchain can improve nursing [[🔗 article](#)]
- Integral Futures Questions [[🔗 website](#)]
- Implementation of a novel postoperative monitoring system using automated Modified Early Warning Scores (MEWS) incorporating end-tidal capnography [[🔗 website](#)]
- Leveraging NLP to Improve Quality and Patient Safety at a Large Academic Health System [[🔗 article](#)]
- New Nursing Challenge: Adapting to AI-enabled Workflows [[🔗 website](#)]
- Reimagining Patient Care with AI [[🔗 video](#)]
- Moving Past the Promise of AI to Real Uses in Health Care Delivery [[🔗 article](#)]

AI In Nursing

- Artificial intelligence: Essentials for Nursing [[🔗 article](#)]
- Artificial intelligence, nurses and the Quadruple Aim [[🔗 article](#)]
- Artificial intelligence in nursing [[🔗 article](#)]
- Artificial Intelligence in Nursing: Priorities and opportunities from an international invitational think-tank of the Nursing and Artificial Intelligence Leadership Collaborative [[🔗 website](#)]
- Augmented Intelligence and Nursing [[🔗 article](#)]
- How artificial intelligence is changing nursing [[🔗 website](#)]
- Precision Nursing [[🔗 article](#)]
- Toward an Augmented Nursing-Artificial Intelligence Future [[🔗 article](#)]



Transdisciplinary

Transdisciplinary

- 35 Innovators In Biotech Break New Ground [[🔗 article](#)]
- Accelerating Therapeutics for Opportunities in Medicine (ATOM) [[🔗 website](#)]
- AI and Clinical Trials [[🔗 website](#)]
- AI & Machine Learning with Healthcare IQ [[🔗 website](#)]
- AI for Healthcare and Life Sciences [[🔗 website](#)]
- AI In Pharma and Life Sciences [[🔗 article](#)]
- Climate Change: Breakthrough Climate Technologies [[🔗 website](#)]
- Computing and AI For Health, Medicine, Surgery [[🔗 website](#)]
- Information Technology & Innovation Foundation [[🔗 website](#)]
- Lirio—Behavioral Science With AI [[🔗 website](#)]
- Microsoft AI for Health [[🔗 website](#)]
- Partnership on AI [[🔗 website](#)]
- Stanford Partnership in AI Assisted Care [[🔗 website](#)]
- UF Health AI [[🔗 website](#)]
- What Is Artificial Intelligence In Medicine—IBM [[🔗 website](#)]



FAQ's

Q: What is Data Science?

A: This is a comprehensive resource that provides data science definitions, examples, and career paths. [[🔗 website](#)]

Q: What is the difference between Data Science and Artificial Intelligence?

A: Data science helps find hidden patterns and trends in data. It is a discipline that aims to extract useful data, then process, make sense of, and ultimately use it for decision-making. In contrast artificial intelligence is a product of human creation, used to handle data autonomously, removing the human from the task to work on its own with the help of data scientists. [[🔗 website](#)]

Q: What are the types of traditional Artificial Intelligence (AI) nurses should know about?

A: The article “Artificial intelligence: Essentials for nursing” describes these well. [[🔗 website](#)]
McGrow K. (2019). Artificial intelligence: Essentials for nursing. Nursing, 49(9), 46–49.

Q: What are the latest types of AI?

A: This [[🔗 website](#)] defines Generative AI, Large Language Models and Foundation Models used in tool like Chat GPT, Bard by Google, Bing AI, and OpenAI Playground.



FAQ's (cont.)

Q: What is an LLM, and what is ChatGPT?

A: Large Language Model (LLM) uses artificial intelligence to ingest and produce large collections of word responses with answers and information as a human would. However, two of the biggest drawbacks are that it does not have the ability to think critically (as it lacks cognition) or understand topics in context. This is largely related to the model's training, and its attempts to produce patterns when sometimes there aren't direct correlations between one topic and another. OpenAI's ChatGPT is one example of an LLM. Others include Anthropic's Claude, Microsoft's Bard, Google's PaLM, and Meta's LLaMa. [[📄 website](#)]

Q: What are some of the pros and cons of LLMs/ChatGPT and their use in nursing education?

A: Like most concerns with the use of AI and LLMs, 96.7% of respondents were concerned about the ethical use of AI for students, plagiarism, legal issues in accessing copyrighted or trademarked materials, inaccuracies in results and the risk for biased responses related to a term called, infodemic (Sallam, 2023). An infodemic occurs when there is an abundance of written material with erroneous contents. (Example: LLMs will only reveal answers related to what it's consumed, so if an article reads: "The sky is green, the grass is blue," it will pass this information back to the user.

ChatGPT and other AI-based LLMs are useful in reading and summarizing large bodies of text information and can help accelerate task times in research. It can also read, respond, and retrieve answers to complex questions at record speeds. Some of the detractors are related to AI hallucinations, where the system attempts to create a response to a question where there is no factual answer. Given the nature of AI's ability to 'predict' the next best action or occurrence, this is a normal phenomenon but needs oversight, retraining, tuning, and verification.



FAQ's (cont.)

Q: What are some of the pros and cons of LLMs/ChatGPT and their use in nursing education?

A: However, some healthcare companies are creating healthcare-specific LLMs (data sets filled with Healthcare information, texts, books, articles, etc.) to sharpen training models and reduce those events.

Another detractor to the use of LLMs in nursing education is related to the perception that the use of AI gives students an unfair advantage in studying materials. Since the deployment of ChatGPT in November of 2022, many members of the academic community have encountered an increase in AI produced assignments and have restricted the use of LLMs in their courses through the syllabus.

Lastly, AI and ChatGPT don't meet the citation requirements as an "author" since the information provided wasn't produced by a human mind (with cognition). [[∞ website](#)]

Sallam, M. ChatGPT Utility in Healthcare Education, Research, and Practice: Systematic Review on the Promising Perspectives and Valid Concerns. *Healthcare* 2023, 11, 887. <https://doi.org/10.3390/healthcare11060887>



FAQ's (cont.)

Q: What is the difference between AI and Predictive Analytics?

A: While both AI and predictive analytics involve the use of data to forecast future outcomes, they operate in different ways and have different capabilities.

Predictive Analytics involves the use of statistical models and forecasting techniques to understand future behavior. Its primary goal is to forecast what might happen in the future based on historical data. Predictive models use known results to develop a model that can be used to predict values for different or new data. Healthcare providers, for instance, use predictive analytics to identify trends or risk factors and apply preventative measures.

Artificial Intelligence, on the other hand, not only predicts outcomes but also learns from its own predictions, adjusts its algorithms based on outcomes, and improves its predictive capability over time. AI can handle vast amounts of structured and unstructured data and learns patterns from this data to make predictions or decisions without being explicitly programmed to perform the task. AI in healthcare might involve using machine learning algorithms to predict patient readmissions or using natural language processing to extract information from unstructured medical notes.

In essence, while both AI and predictive analytics are used to analyze current data to make predictions about the future, AI goes a step further by learning from its own predictions and refining its algorithms, making it a more powerful and flexible tool.

Q: How does AI improve healthcare?

A: AI can significantly enhance healthcare by providing personalized medicine, predicting disease outbreaks, advancing disease diagnosis, and improving treatment protocols. For example, AI can analyze extensive medical records to predict potential health risks and prescribe preventative measures. Furthermore, AI can enhance patient care by enabling real-time monitoring, thus reducing hospital visits and making healthcare more efficient and cost-effective.



FAQ's (cont.)

Q: What is the difference between AI and Augmented Intelligence?

A: Augmented Intelligence is a way to conceptualize AI's assistive role in human-decision making. The term, often used synonymously with AI, emphasizes how AI enhances and amplifies human intelligence instead of replacing it. For nurses, augmented intelligence highlights efficiencies gained from effective data use in clinical practice and operations (Tiase & Cato, 2021). [[% article](#)]

Q: What is the difference between Virtual Reality and Augmented Reality?

A: Virtual Reality (VR) is a type of Artificial Intelligence using a visual replica or digitally created simulated environment where users can view movies, scenes, or training scenarios.

Augmented Reality (AR), however, combines virtual reality with our real-life environments by overlaying a digital image in your (actual) physical space. It is a hybrid visual model, like Pokémon Go, where users can see digital items in real spaces. Another example of a use case is when shoppers use their smartphone cameras to 'see' how a piece of furniture might look inside their room or how sunglasses might look on their face using a digital application or web-based browser.

Q: What role does data science play in healthcare?

A: Data science in healthcare is primarily used for predictive analytics and decision-making. It allows healthcare professionals to make informed decisions based on past and current data trends. With the help of data science, healthcare providers can predict disease spread, anticipate patient needs, optimize treatment plans, and improve overall patient outcomes.



FAQ's (cont.)

Q: How is AI expected to evolve in the future, specifically in the healthcare sector?

A: Future AI advancements are predicted to include more precise disease prediction and diagnosis, enhanced patient care, furthered drug discovery, and improved patient engagement. Moreover, we can expect AI to be more integrated into daily healthcare practices, with healthcare professionals and AI working side by side to provide optimal patient care.

Q: Can AI and data science replace healthcare professionals?

A: While AI and data science can significantly enhance healthcare, they are not meant to replace healthcare professionals. These technologies are tools that, when used correctly, can aid healthcare professionals in providing more accurate, efficient, and personalized care. The human touch in healthcare is irreplaceable, and AI and data science aim to augment, not substitute, this aspect.

Q: What are the challenges and limitations of AI and data science in healthcare?

A: Challenges and limitations include data privacy and security concerns, the need for extensive data for accurate predictions, potential bias in AI algorithms, and the complexity of healthcare data. It is also crucial to have proper oversight and regulatory measures to ensure the ethical and responsible use of these technologies.

Q: How can we use VR and AR in training, nursing education, and simulation?

A: Today, simulation labs are commonly accepted within nursing education with the goal of helping students practice, learn, and demonstrate skills-based assessments on robotic/enhanced mannequins. Moving toward the future, VR software applications and headsets can also be used as adjunctive training opportunities to help nursing students become exposed to and encounter real-life scenarios safely and with computer guidance.

VR applications are computer programs built by software companies with the goal of educating users on a particular lesson or set of events. Seeing that we're living in a digital world and must equip learners through a variety of techniques, VR images can assist with learning different anatomical structures or nursing procedures. In using AR, a hybrid VR model where images are placed upon a structure could be helpful in identifying CPR hand placement on a standard mannequin or scanning QR codes for different lectures. [[website](#)]

Lange, A., et al. (2020). Learning with virtual reality in nursing education: Qualitative interview study among nursing students using the unified theory of acceptance and use of technology model. JMIR Nursing, 3(1)
doi:<https://doi.org/10.2196/20249>

FAQ's (cont.)

Q: How can nurses utilize AI in their day-to-day practice?

A: AI integration into the fabric of nursing practice is not just a futuristic concept but a pre-sent-day reality that's reshaping the healthcare landscape. With its increasing prevalence, AI is enhancing several key areas of nursing, streamlining workflows and amplifying the efficacy of patient care. In the realm of clinical decision-making, AI-powered tools offer nurses a wealth of data-driven insights. These insights, woven into electronic health records and mobile health applications, aid in risk assessment, diagnosis, and formulating treatment plans. They provide actionable options and information, including alerts and guidelines, which enhance the decision-making process. Such clinical decision support tools have become integral components of nursing practice, improving accuracy and specificity in tasks that were once heavily reliant on manual processes.

When it comes to task automation, AI is a game-changer. It takes over routine duties such as documentation and patient monitoring, liberating nurses from the clutches of paperwork and allowing them to dedicate more time to what they do best—providing direct patient care. This shift not only enhances the quality of care but also increases job satisfaction among nursing professionals, as they engage more deeply with the aspects of their role that necessitated their calling. Moreover, AI plays a transformative role in patient education. By tailoring educational content to align with individual health profiles and preferences, AI ensures that learning is a personalized experience, greatly enhancing patient engagement and understanding. Such personalization is particularly pivotal in managing chronic illnesses and promoting health literacy among diverse patient populations.

AI's commonality in current clinical settings is evidenced by the myriad of tools nurses encounter daily. Mobile health and sensor-based technologies have revolutionized patient monitoring, especially for chronic conditions. By leveraging smartphones, wearable devices, and environmental sensors, these technologies facilitate a continuous data stream between patients and healthcare providers. Nurses are at the forefront of this technological wave, employing these tools to deliver care beyond the traditional clinical settings, thus broadening the horizons of healthcare accessibility and patient empowerment. Voice assistants and robotics are other AI facets making headway into nursing practice. They enhance patient-nurse interactions through voice-based commands for routine tasks, data recording, and providing medication reminders. Robotics, including telepresence robots, have proven invaluable in extending the reach of nursing care, mitigating risks during infectious outbreaks like the COVID-19 pandemic, and providing care to the most vulnerable populations, such as older adults and patients with disabilities.

The intersection of AI with nursing is a dynamic and evolving frontier. As these technologies mature, they promise to further augment nursing practice, not by replacing the human element but by reinforcing it—ensuring that nurses can deliver compassionate, efficient, and high-quality care. Understanding and embracing these AI tools is not an optional extra for nurses; it's a critical component of modern healthcare delivery that underscores the necessity for nurses to be actively involved in leading AI developments and application in healthcare.



FAQ's (cont.)

Q: Why is it important for nurses to be involved in the use of AI in healthcare?

A: The burgeoning prevalence of AI in healthcare underscores the need for nurses to be deeply involved in its utilization. As frontline caregivers, nurses are uniquely positioned to provide critical insights that can shape the development of AI systems, ensuring they align with the complex nuances of patient care. Their extensive experience with medical devices and technology positions them as pivotal figures in guaranteeing the safe and effective integration of AI into healthcare routines.

Nurses' intimate knowledge of patient care also positions them as key advocates for the ethical application of AI. They play a crucial role in safeguarding patient rights and privacy and are instrumental in addressing potential biases within AI algorithms. This advocacy ensures that the deployment of AI technology aligns with the core values of nursing: to do no harm and to prioritize patient well-being.

Furthermore, as educators, nurses have the expertise to guide the development of AI tools in patient education, ensuring information delivered is not only personalized but also easily understood by patients, enhancing their engagement and outcomes. Their voice is pivotal in leading AI advancements, as they can identify practical challenges and opportunities for innovation from a healthcare perspective, bridging the gap between technology and hands-on patient care.

Nurses' involvement in interdisciplinary collaboration enriches the dialogue between technologists, clinicians, and patients, fostering the creation of AI solutions that are robust, versatile, and inclusive. They are integral to the adoption and adaptation process of AI in healthcare, providing feedback that steers the continuous refinement of these technologies to better fit clinical workflows, thus enhancing overall efficiency and the quality of patient care.

In essence, the active participation of nurses in the realm of AI is not merely beneficial but essential.

Q: How is data science relevant to the nursing profession?

A: Data science allows nurses to make evidence-based decisions that improve patient outcomes. It can help predict patient deterioration, inform personalized care plans, and identify trends in patient populations. Furthermore, understanding data science is becoming an essential competency for nurses as healthcare becomes increasingly digitized.

FAQ's (cont.)

Q: What are risks associated with the integration of AI in healthcare, particularly in nursing practice?

A: Integrating AI in healthcare, including nursing, involves various risks:

Bias and Inequality: AI may exhibit biases inherent in its training data, potentially leading to unequal care outcomes across different demographic groups.

Privacy Concerns: The use of extensive health data in AI raises privacy concerns and risks of data misuse.

Ethical Dilemmas: Nurses may encounter ethical concerns when AI suggestions conflict with their clinical judgment or patient preferences.

Data Security: The large datasets required for AI are susceptible to cyberattacks, threatening patient confidentiality.

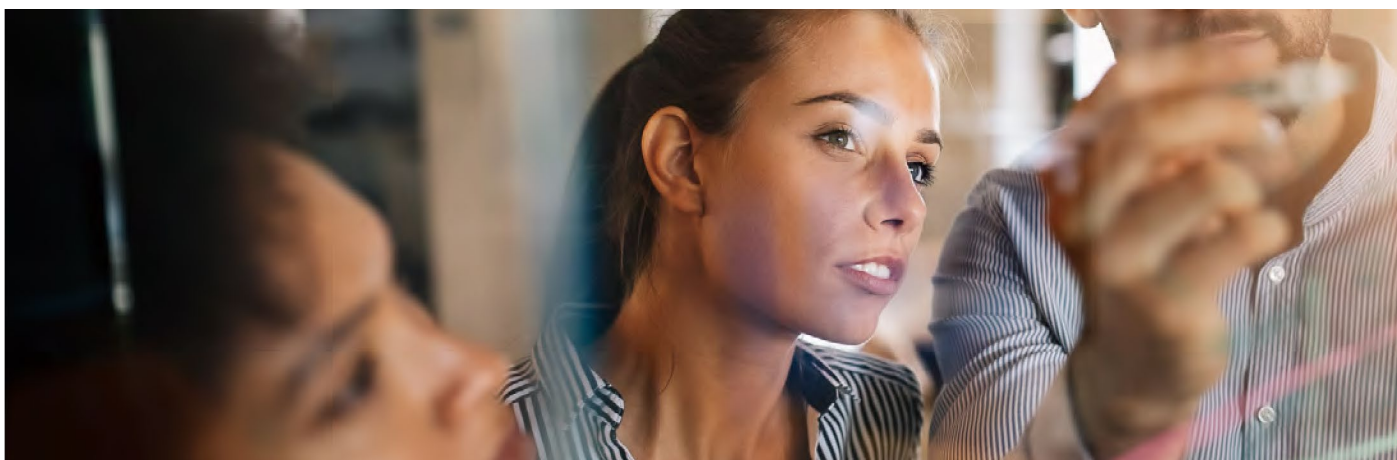
System Failures: Technical issues or poor data quality can cause AI malfunctions, risking incorrect clinical decisions.

Misdiagnosis and Treatment Errors: AI's limitations in complex medical cases can lead to errors in diagnosis or treatment.

AI Hallucinations: Hallucinations refer to instances where AI models generate incorrect, fabricated, or misleading information, posing serious risks in clinical decision-making.

Over-reliance on AI: Excessive dependence on AI might undermine healthcare providers' clinical expertise and observational skills.

Mitigating these risks requires robust oversight, ongoing training, and active involvement of nurses in all stages of AI development and application. This includes understanding the limitations of AI, ensuring the diversity and quality of training data, and prioritizing patient-centered care. Nurses' involvement is crucial in AI tool development to align them with nursing workflows and enhance patient care and outcomes.



FAQ's (cont.)

Q: What ethical considerations arise with the use of AI and data science in nursing?

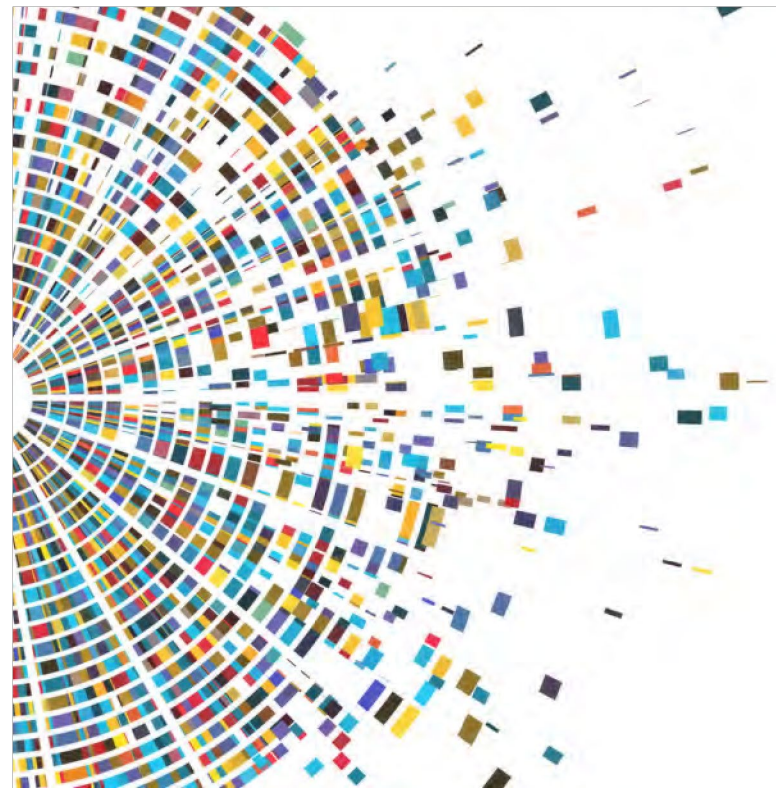
A: Ethical standards dictate that we must prioritize patient confidentiality and privacy at all times. Additionally, we must ensure the precision and integrity of AI algorithms to uphold the highest quality of care. It's imperative to rigorously identify and correct any biases within AI tools to guarantee fair and equitable treatment for all patients. Nurses are encouraged to integrate their critical judgment with AI insights, reinforcing the notion that technology is a supplement to, not a substitute for, the nuanced care only humans can provide. Furthermore, a steadfast commitment to diversity, equity, and inclusion is essential to the responsible deployment of AI, as these values significantly influence patient outcomes and trust in healthcare systems. [[website](#)]

Naik, et al. (2022). Legal and Ethical Consideration in Artificial Intelligence in Healthcare: Who Takes Responsibility? *Frontiers in Surgery*, 9(2022). Retrieved from <https://www.frontiersin.org/articles/10.3389/fsurg.2022.862322/full>

Q: How can Generative AI like ChatGPT be applied in the field of nursing?

A: Generative AI, such as ChatGPT, has significant potential for nursing. It can be used to automate routine documentation, provide decision-support tools, facilitate patient education, and offer emotional support. For example, AI could be used to assist in maintaining patient records, allowing nurses more time for direct patient care.

In patient education, AI could generate personalized information to patients based on their unique health needs or conditions. Moreover, ChatGPT can also be used to simulate conversational scenarios, helping in nursing education and training by creating diverse patient interactions. However, it's essential to remember that while AI can aid and enhance nursing practices, it is not a replacement for the human touch and judgement that forms the core of nursing. AI tools should always be used as a supplement to, not a substitute for, the skill and care of a human nurse. [[website](#)]



Data Science, Augmented, & Artificial Intelligence

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Resource Guide Updates Log		
Date Last Updated	By Who?	What was updated?
06/08/2025	Shannon Gahagan, Graphic Designer	Cover, pagination, and margins
04/09/2025	Shannon Gahagan, Graphic Designer	New brand colors, logos and fonts, re-formatted layout and stylization of hyperlinks, updated subheaders, corrected spelling and grammar errors

INNOVATION ADVISORY COMMITTEE
Data Science, Augmented & Artificial Intelligence

These are resources, content, including organizations that are beneficial for nurse innovators to know about no matter their area of interest or focus.

These resources have been compiled into our Data Science, Augmented & Artificial Intelligence Resource Guide.

Our goal when creating these resource guides was to avoid redundancy and ensure unique content across all eight resources.

The creation of the Data Science, Augmented & Artificial Intelligence Guide is a compilation of content from all seven innovation advisory committees. We thank each committee for contributing to the advancement of nurse-led innovation.

The views and opinions expressed within these resources may not reflect the positions or policies of the American Nurses Association. The resources are provided for the sole purpose of highlighting innovative work across the nursing profession.

Listing of links to organizations or groups shall not be construed as an endorsement of said organizations or groups. If you have any questions or concerns, please contact us [here](#).

