POLICY BRIEF

HEALTH & SOCIAL POLICY

Guinn CENTER

ARTIFICIAL INTELLIGENCE IN HEALTHCARE

THE USES, BENEFITS, AND ONGOING CONCERNS RELATING TO INCREASED AI USE IN HEALTHCARE SETTINGS

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INTRODUCTION

Despite a decade of growth in the number of physicians, nurses, dentists, and other healthcare professionals, Nevada continues to face a shortage of healthcare workers. Because of their population-to-provider ratios, nearly every county in Nevada has been designated a Health Professional Shortage Area.[1] As highlighted in our April 2025 publication, *Moving the Needle: Challenges in Meeting Nevada's Health Workforce Needs*, Nevada policymakers at the federal, state, and local levels have identified healthcare workforce development as a key priority.

As policymakers work to confront persistent workforce shortages, artificial intelligence (AI) has emerged as a promising tool to help extend provider capacity. Yet the rapid pace of AI development continues to outpace existing regulatory and oversight structures, raising pressing questions about how these technologies should be implemented and what governance mechanisms are needed to ensure patient safety, transparency, and public trust.

Through this policy brief, the Guinn Center assesses current applications of AI in healthcare, with particular attention to how these tools are being deployed to support clinical, administrative, and operational functions. The brief also evaluates the risks and limitations associated with AI adoption, including concerns related to patient safety, data privacy, algorithmic bias, and public trust, and examines the evolving legislative and regulatory landscape in Nevada, the United States, and internationally. Finally, it identifies policy gaps and offers a framework to guide decision-makers in balancing innovation and access with the safeguards necessary to ensure responsible and equitable AI deployment.

KEY TAKEAWAYS

- **Artificial Intelligence is emerging as a critical tool for Nevada in addressing healthcare workforce shortages, improving health outcomes, mitigating disease outbreaks, and improving administrative efficiency.**
- **AI tools are being used in the healthcare field for predictive modeling, medical diagnosis and treatment, pharmaceutical research, billing and insurance claim management, clinical recordkeeping, and more, with studies finding that they improve accuracy and efficiency.**
- **Regulation of AI at the state level is complicated by the federal government's desire for a standardized national framework. This report offers a framework for analyzing policy risks and opportunities in AI deployment.**

1. HRSA Data Warehouse, "Health Workforce Shortage Areas," retrieved October 2, 2025, https://data.hrsa.gov/topics/health-workforce/shortage-areas/.

CURRENT USES OF AI IN HEALTHCARE

Public discourse about AI is incredibly varied and often comes with strong opinions. In the medical arena, some have claimed AI will soon render certain medical professionals unnecessary, while others have said it will cure cancer in our lifetime.[2] The current reality of AI in healthcare is neither as gloomy nor as exciting as these predictions, but it is encouraging.

The Guinn Center policy brief, *Artificial Intelligence: A General Overview*, published in April 2024, explains that the term "artificial intelligence" has carried many definitions over the years, but it generally refers to technology designed to mimic, imitate, or simulate human thought and behavior. In healthcare, AI is emerging in many different forms. The National Academy of Medicine published a 2022 report examining key considerations and uses of AI in healthcare and found that potential benefits include improving patient and clinical team outcomes, reducing healthcare costs, and improving population health.[3]

The integration of AI in healthcare largely falls into four categories: (1) diagnosis and treatment; (2) patient engagement and compliance with treatment plans; (3) research; and (4) administrative functions. It is already demonstrating consistent effectiveness in radiology and medical imaging, sepsis management, drug discovery, and administrative operations.

AI IN DIAGNOSIS AND TREATMENT

Artificial intelligence is being increasingly used to assist healthcare providers in diagnosing complex and emerging conditions, such as cancer, cardiovascular disease, and neurological disorders, through medical imaging and predictive analytics.[4] Several studies have found that the use of AI systems in medical diagnosis and treatment has improved the accuracy and efficiency of medical image analysis. With the innovations of deep learning algorithms and advanced machine learning frameworks, AI systems are able to examine larger datasets, detect previously overlooked patterns and inaccuracies, and in the healthcare setting, speed up the interpretation of complex images, improve early detection of disease, and optimize healthcare delivery.[5]

In radiology and medical imaging, the use of AI for diagnosing breast lesions in contrast-enhanced mammography shortened the processing time by up to 99.67 percent compared to the traditional method.[6] Deep learning technologies are also significantly improving physician accuracy in detecting abnormalities on chest X-rays, representing a major breakthrough in diagnostic capabilities.[7]

Researchers found in 2024 that the use of AI in clinical diagnosis improved accuracy and reduced diagnostic time by approximately 90 percent across medical fields.

Source: See note 6.

2. "This Radiologist Is Helping Doctors See Through the Hype to an AI Future," *UAB Reporter*, December 5, 2022, https://www.uab.edu/reporter/people-of-uab/this-radiologist-is-helping-doctors-see-through-the-hype-to-an-ai-future; Toi Tech Desk, "OpenAI CEO Sam Altman Says AI Can Cure Cancer One Day If…," *The Times of India*, September 26, 2025, https://timesofindia.indiatimes.com/technology/tech-news/openai-ceo-sam-altman-says-ai-can-cure-cancer-one-day-if/articleshow/124152800.cms.
3. Michael Matheny et al., *Artificial Intelligence in Health Care: The Hope, the Hype, the Promise, the Peril* (Washington DC: The National Academies Press, 2022), https://doi.org/10.17226/27111.
4. Luis Pinto-Coelho, "How Artificial Intelligence Is Shaping Medical Imaging Technology: A Survey of Innovations and Applications," *Bioengineering* 10 (12): 1435 (2023), https://doi.org/10.3390/bioengineering10121435.
5. Ibid.
6. Jinseo Jeong et al., "Reducing the Workload of Medical Diagnosis Through Artificial Intelligence: A Narrative Review," *Medicine* 104, no. 6 (2025): e41470, https://doi.org/10.1097/md.0000000000041470.
7. Pär Kragsterman, "AI in Medical Imaging: Key Research Advances 2025," Collective Minds, April 28, 2026, https://collectiveminds.health/articles/medical-imaging-research-breakthroughs-in-ai-and-advanced-technologies.

As AI can be programmed to deliver insights and recommendations based on scientific principles to healthcare professionals, AI-based diagnostic tools not only speed up the interpretation of complex images but also improve early disease detection, ultimately delivering better patient outcomes.[8] A recent study of a stroke detection tool showed a 44 percent reduction in time from patient arrival to diagnosis and first contact with a treating surgeon.[9]

Artificial intelligence systems have also been noted for their predictive analytic abilities, which detect and warn of high-risk conditions such as sepsis and heart failure. Sepsis is a leading cause of morbidity and mortality in intensive care units worldwide, contributing to millions of deaths annually. Delayed recognition and treatment remain the most critical factors associated with poor outcomes. However, several AI models are being used successfully in clinical practice:

- Sepsis Watch from the Duke Institute for Health Innovation provides real-time deep learning alerts that have been associated with a 27 percent reduction in sepsis deaths at Duke.
- InSight from Dascena is an FDA-approved system that predicts sepsis up to 48 hours before symptom onset.
- COMPOSER, developed at University of California, San Diego, continuously analyzes more than 150 clinical variables to identify high-risk patients.
- An engineer at Johns Hopkins University developed the Targeted Real-Time Early Warning System (TREWS) that is shown to decrease mortality, organ failure, and length of hospital stay, and to improve antibiotic timeliness.[10]

Recent research finds that by providing early diagnosis and appropriate interventions, AI can help minimize the financial burden of post-treatment complications and lead to substantial cost savings.[11] This allows providers to give patients a more precise, early diagnosis and tailored treatment strategies.[12]

Studies have shown that AI integration in the diagnosis and treatment of complex conditions has been largely positive. However, researchers at the National Institutes of Health have noted that while integrating AI enables medical professionals to diagnose patients faster, AI is not advanced enough to replace human experience, which is crucial for accurate diagnosis.[13] As noted in a July 2024 article, physician-graders found that an AI model that consistently outperformed human physicians on multi-choice questions frequently made mistakes when describing images and explaining how its decision-making led to the correct answer, emphasizing the necessity to evaluate and narrowly define how specific systems may be used by practitioners.[14]

Predictive analysis using AI is also proving to be an effective tool in tracking the spread of disease at a community level. In July 2025, researchers detected SARS-CoV-2 variants in wastewater through genome sequencing and machine learning. Study co-author Edwin Oh, a professor with the Nevada Institute of Personalized Medicine at UNLV, stated, “Through the use of AI, we can determine how a pathogen is evolving without even testing a single human being.”[15]

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8. Pinto-Coelho, “Medical Imaging Technology.”
9. “Viz.ai’s Stroke Solution Evaluated in Studies on Treatment Times and Financial Impact,” *Endovascular Today*, February 19, 2025, https://evtoday.com/news/vizais-stroke-solution-evaluated-in-studies-on-treatment-times-and-financial-impact.
10. Roy Adams et al., "Prospective, Multi-Site Study of Patient Outcomes After Implementation of the TREWS Machine Learning-Based Early Warning System for Sepsis," *Nature Medicine* 28 (July 2022), https://doi.org/10.1038/s41591-022-01894-0.
11. Margaret Chustecki, “Benefits and Risks of AI in Health Care: Narrative Review,” *Interactive Journal of Medical Research* 13 (2024): e53616, https://doi.org/10.2196/53616.
12. Craig Lee et al., “Evaluating the Impact of Artificial Intelligence (AI) on Clinical Documentation Efficiency and Accuracy Across Clinical Settings: A Scoping Review,” *Cureus Journal of Medical Science* 16, no. 11 (2024): e73994, https://doi.org/10.7759/cureus.73994.
13. “NIH Findings Shed Light on Risks and Benefits of Integrating AI into Medical Decision-Making," news release, July 23, 2024, https://www.nih.gov/news-events/news-releases/nih-findings-shed-light-risks-benefits-integrating-ai-into-medical-decision-making.

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AI IN CLINICAL DOCUMENTATION, PATIENT ENGAGEMENT, AND TREATMENT COMPLIANCE

Artificial intelligence has also demonstrated significant potential to improve clinical documentation and reduce the time providers spend on it. A 2018 study found that clinical documentation can account for up to 37 percent of provider work time, greatly reducing the time available for direct patient care.[16] However, more recent studies have shown that the use of AI applications, such as speech recognition technology, has led to lower provider burnout and improved workflow efficiency.[17]

A 2024 article evaluating the impact of AI on clinical documentation found that, in addition to improving clarity, AI tools have been linked to increased efficiency in clinical recordkeeping.[18] These systems can automatically extract relevant information from sources such as electronic health records, diagnostic reports, and nursing notes, and organize it into comprehensive, standardized patient profiles. By centralizing patient information in a standardized format, AI tools for clinical documentation enable seamless information exchange among nurses, physicians, pharmacists, and other stakeholders, facilitating a more integrated approach to patient care.

On a cautionary note, while studies have shown that AI integration can greatly reduce providers' administrative burden, error management remains a significant challenge.[19] Because AI in clinical documentation relies heavily on speech recognition, risks such as omissions, fabricated information, and even hallucinations require continuous oversight by providers prior to submitting documentation.

14. Qiao Jin et al., "Hidden Flaws Behind Expert-level Accuracy of Multimodal GPT-4 Vision in Medicine," *Npj Digital Medicine* 7, 190 (2024), https://doi.org/10.1038/s41746-024-01185-7.
15. Xiaowei Zhuang et al., "Early Detection of Emerging SARS-CoV-2 Variants From Wastewater Through Genome Sequencing and Machine Learning," *Nature Communications* 16 (1): 6272 (2025), https://doi.org/10.1038/s41467-025-61280-5; Keyonna Summers and Erica Corliss, "How AI Can Enhance Early Detection of Emerging Viruses: UNLV Study," UNLV, July 18, 2025, https://www.unlv.edu/news/article/how-ai-can-enhance-early-detection-emerging-viruses-unlv-study.
16. Erik Joukes et al., "Time Spent on Dedicated Patient Care and Documentation Tasks Before and After the Introduction of a Structured and Standardized Electronic Health Record," *Applied Clinical Informatics* 9, no. 1 (2018): 47, https://doi.org/10.1055/s-0037-1615747.
17. Lee, "Clinical Documentation Efficiency and Accuracy."
18. Ibid.
19. Ibid.

AI IN MEDICAL RESEARCH

The past two years in the AI revolution have marked a shift from its theoretical potential in medical research to clinical validation of its usefulness. By leveraging massive datasets, advanced algorithms, and high-performance computing, AI tools can uncover patterns and insights that would be nearly impossible for human researchers to detect unaided. In pharmaceutical research, these tools have been applied to every stage of the drug discovery pipeline.[20]

The drug Rentosertib, which is being developed to treat Idiopathic Pulmonary Fibrosis, is entering its pivotal phase IIb/III clinical trials. The entire discovery and development process was conducted by Insilico's generative AI platform, Pharma.AI, which identified both the biological target (the protein) and the responsive molecular structure (the drug). On this platform, the typical drug-discovery process takes only 12 to 18 months, about half the typical time.[21]

Recursion Pharmaceuticals, using its BioHive-2 AI supercomputer and a proprietary operating system, has moved several drug candidates into clinical trials. One is a first-of-its-kind degrader of the RBM-39 protein, which is believed to cause solid tumors and lymphoma.[22]

These and other advances are exciting. Given the ever-accelerating momentum in AI development, good news should continue to come from the field of medical research.

AI IN ADMINISTRATIVE FUNCTIONS

Artificial intelligence has also been adopted in healthcare administrative processes and used to streamline scheduling, billing, and insurance claims management. These tools also ensure essential support remains available around the clock, improving accessibility and workflow efficiency.

In 2024, Nevada Health Link became the first state-based health insurance marketplace to receive approval from the Centers for Medicare & Medicaid Services to use AI-based interactive virtual agents to enhance the customer service experience.

By automating routine and task-based interactions, healthcare employees can focus on more complex, high-priority issues while reducing customer wait times.

In addition to ensuring that essential support is available around the clock, AI integration can enable healthcare systems to process large volumes of data faster and more accurately, minimizing administrative errors that can delay care or lead to billing complications. During the 2024 open enrollment period, Nevada Health Link found that 14.5 percent of all incoming calls were fully resolved by the virtual agent, which guided users through the enrollment process and provided immediate responses to common questions.[23]

AI-powered systems can analyze vast amounts of patient data to identify patterns, detect anomalies, and flag potential risks or adverse events. However, these same capabilities raise complex issues related to privacy, bias, liability, and professional accountability.[24]

While AI tools offer clear advantages in efficiency and communication, they also introduce a range of ethical, legal, and operational challenges that require careful oversight.

20. Doni Dermawan and Nasser Alotaiq, "From Lab to Clinic: How Artificial Intelligence (AI) Is Reshaping Drug Discovery Timelines and Industry Outcomes," *Pharmaceuticals* 18, no. 7 (2025): 981, https://doi.org/10.3390/ph18070981.
21. Insilico Medicine, "Insilico Medicine Announces Nature Medicine Publication of Phase IIa Results Evaluating Rentosertib, the Novel TNIK Inhibitor for Idiopathic Pulmonary Fibrosis (IPF) Discovered and Designed With a Pioneering AI Approach," news release, June 3, 2025, https://www.biospace.com/press-releases/insilico-medicine-announces-nature-medicine-publication-of-phase-iia-results-evaluating-rentosertib-the-novel-tnik-inhibitor-for-idiopathic-pulmonary-fibrosis-ipf-discovered-and-designed-with-a-pioneering-ai-approach.

RISKS OF AI USE IN HEALTHCARE

ALGORITHMIC BIAS

A critical challenge in integrating AI into healthcare systems is its vulnerability to algorithmic bias, which arises when training data misrepresents certain populations. Most AI algorithms require large datasets from which to learn, but if the training data is not representative of population variability, AI is prone to reinforcing bias, which can lead to inaccurate generalization, misdiagnoses, and even fatal outcomes.[25]

Bias may arise from imbalanced data, subjective data-collection processes, insufficient regulatory oversight in design, or the replication of historical prejudices that embed inequalities into algorithms.[26] In melanoma diagnosis, for example, existing disparities are well-documented. Darker-skinned patients often present at later stages and have lower survival rates than fair-skinned patients. These disparities are mirrored in AI-based melanoma prediction models, which are typically trained on images from light-skinned patients in the United States, Europe, and Australia. As a result, these AI models exhibit worse performance on images of lesions in darker skin tones, leading to lower predictive performance when deployed in real-world settings.[27]

Algorithms often reflect the perspectives and priorities of their developers, which may not align with the needs of the populations most affected. A lack of diversity in engineering and biomedical teams can also replicate unconscious bias in AI tools.[28] To address these issues, AI developers may wish to implement mitigation strategies, including: (1) collecting large and demographically diverse datasets; (2) applying statistical debiasing methods; (3) conducting thorough model evaluations; (4) prioritizing interpretability; and (5) enforcing standardized transparency and bias-reporting protocols. Recognizing that bias exists many places in the healthcare field, AI developers have the opportunity to improve equity in health outcomes by deliberately examining their datasets to ensure adequate representation across racial, ethnic, and sociodemographic dimensions.[29]

Policymakers, healthcare leaders, and clinicians must work collaboratively to establish standards for transparency, accountability, and data protection, ensuring that AI is used responsibly to balance innovation and access, with patient safety and public trust.

Many datasets used to train AI for clinical tasks overrepresent non-Hispanic Caucasian patients, resulting in models that do not perform equally well across demographic groups.

Source: See note 27.

22. Recursion, "Our Leading AI-driven Drug Discovery Pipeline," https://www.recursion.com/pipeline.
23. GetInsured, "Nevada Health Link Spearheads AI Implementation, Championing Cutting-Edge Technology for Unparalleled Consumer Engagement," April 3, 2024, https://www.prnewswire.com/news-releases/nevada-health-link-spearheads-ai-implementation-championing-cutting-edge-technology-for-unparalleled-consumer-engagement-302106461.html.
24. Tuan Pham, "Ethical and Legal Considerations in Healthcare AI: Innovation and Policy for Safe and Fair Use," *Royal Society Open Science* 12, no. 5 (2025): 241873, https://doi.org/10.1098/rsos.241873.
25. Natalia Norori et al., "Addressing Bias in Big Data and AI for Health Care: A Call for Open Science," *Patterns* 2, no. 10 (2021): 100347, https://doi.org/10.1016/j.patter.2021.100347.
26. Ibid.
27. James L. Cross et al., "Bias in Medical AI: Implications for Clinical Decision-Making," *PLOS Digital Health* 3, no. 11 (2024): e0000651, https://doi.org/10.1371/journal.pdig.0000651.
28. Norori, "Bias in Big Data and AI for Health Care."
29. Cross, "Bias in Medical AI."

“HUMAN-IN-THE-LOOP” CHALLENGES

In any domain of AI use, whether education, business, military, healthcare, or others, there is cause for concern about AI making high-stakes decisions without human direction. Do we want AI to make the final decision regarding a course of treatment, eligibility for a transplant, or a recommendation that care be withheld from a dying patient? Eventually, AI may be able to make such decisions independently with high confidence, as it does now in self-driving cars, which perform better than humans in accident prevention.[30] Until then, some AI tools, which are sufficiently prone to mistakes, may require human review for certain decisions or actions.

The term “human-in-the-loop” is increasingly brought up in the context of AI, and refers to the need for human interaction, intervention and judgment to control the outcome of a process.[31] A primary concern with the rise of AI is if it will replace humans and to what degree.

In the context of health care, these concerns include discussions of diagnostic oversight, quality control, and informed consent, but the human-in-the-loop consideration can also be more basic: the need for human connection. In medicine, it is difficult to envision that even advanced AI and robotics could replace human compassion, empathy, and discernment. So, the human-AI partnership remains essential. Moreover, research suggests that even when there is productive interaction between a human and AI, there are at least three additional challenges to navigate.

The first challenge is whether medical professionals adhere to the recommendations provided by AI systems, the extent of any deviations from those recommendations, and how to fairly measure the net effect of the AI tool. For example, AI might provide a mix of helpful and incorrect advice. The AI’s effectiveness can only be measured fairly if a clinician follows all the advice, both good and bad. If the clinician ignores some AI advice, this may distort evaluations of the AI’s effectiveness. Research shows that compliance with AI’s recommendations can significantly affect clinical outcomes.[32]

30. Kristofer D. Kusano et al., “Comparison of Waymo Rider-Only Crash Rates by Crash Type to Human Benchmarks at 56.7 Million Miles,” *Traffic Injury Prevention* 26, no. S1 (2025): S8–S20, https://doi.org/10.1080/15389588.2025.2499887.
31. Xiao-Li Meng, “Data Science and Engineering With Human in the Loop, Behind the Loop, and Above the Loop,” *Harvard Data Science Review*, no. 5.2 (Spring 2023), https://doi.org/10.1162/99608f92.68a012eb.
32. Christoph Wilhelm et al., “Benefits and Harms Associated with the Use of AI-related Algorithmic Decision-Making Systems by Healthcare Professionals: A Systematic Review,” *The Lancet Regional Health* - Europe 48 (2025): 101145, https://doi.org/10.1016/j.lanepe.2024.101145.

The second challenge concerns medical ethics in the new era of AI's "black box." A clinician can usually understand the output from an AI tool: advice, ideas, recommendations, insights, et cetera. However, they may not understand how the AI arrived at its conclusions and, amid weighty healthcare decisions, the "why" may be as important as the "what." Clinicians are raising this concern, which has yet to receive the attention it requires. If they are to serve as effective overseers in the human-algorithm partnership, human understanding of the decision-making process is a necessary ethical condition. This need is further complicated by AI's continual evolution of the algorithm; what is understood about the algorithm today may not be entirely true tomorrow.[33]

A third challenge is an implied expectation of improved speed and efficiency in the clinical process. The use of AI speeds up many processes and can complete some tasks in a fraction of the time previously possible. However, the AI work product is often a new part of the overall process, so clinicians may need more time to incorporate the algorithmic input and, through this longer process, achieve better outcomes.[34] This longer process may not meet the expectations of those who believe AI should make everything faster.

UNCERTAINTY IN LEGAL LIABILITY

The rapid development of AI in medicine continues to outpace the development of AI in law and governance, creating an urgent and unresolved challenge: how to attribute liability when AI-enabled clinical decisions cause harm. Physicians, healthcare facilities, and AI developers all face growing uncertainty as traditional legal frameworks strain to accommodate technologies that learn, adapt, and act in ways that defy conventional categories.

While some have proposed granting legal personhood to AI systems as a way to assign responsibility directly to the technology itself, this approach remains largely theoretical and deeply contested.[35] More commonly, liability is considered through existing doctrines, either by treating AI as an agent whose actions fall under the physician's responsibility, or by applying product liability law to developers. However, neither approach serves as a perfect fit. A strict principal-agent model risks chilling clinical adoption if physicians fear being held responsible for difficult or unclear decisions. Conversely, product liability frameworks struggle to fit AI systems that continuously update, diverging from the static "product" assumptions embedded in traditional product liability law.

33. Roanne Van Voorst, "Challenges and Limitations of Human Oversight in Ethical Artificial Intelligence Implementation in Health Care: Balancing Digital Literacy and Professional Strain," *Mayo Clinic Proceedings Digital Health* 2, no. 4 (2024): 559–63, https://doi.org/10.1016/j.mcpdig.2024.08.004.
34. Ibid.
35. Dane Bottomley and Donrich Thaldar, "Liability for Harm Caused by AI in Healthcare: An Overview of the Core Legal Concepts," *Frontiers in Pharmacology* 14 (2023): 1297353, https://doi.org/10.3389/fphar.2023.1297353.

Against this backdrop, three major legal concerns have emerged as especially consequential for healthcare:

- **Clinicians' duty of care:** As AI becomes embedded in diagnosis and treatment, clinicians must determine when and how to rely on AI recommendations, how to maintain adequate oversight, and what constitutes reasonable professional judgment in an AI-mediated environment. The law has yet to articulate clear standards for appropriate deployment, monitoring, or rejection of AI outputs.

- **Informed consent:** As AI tools increasingly shape clinical decisions, patients may need to understand not only the risks and benefits of a proposed intervention but also the role and limitations of the AI systems informing it. Jurisdictions differ on whether AI use must be disclosed, how much detail is required, and whether algorithmic uncertainty itself is a material risk.

- **Liability of AI vendors:** Developers occupy a murky legal space. Their systems influence medical decisions, yet they are not traditional healthcare providers. The European Union has begun to address this gap through a risk-based regulatory structure that imposes obligations such as documentation, monitoring, transparency, and post-market accountability for high-risk AI systems. Other jurisdictions have not yet clarified when vendors may be held responsible for design flaws, training-data biases, or failures in model updates.

As lawmakers and regulators grapple with these questions, the central challenge remains the same: how to determine where liability should land in a complex clinical ecosystem. Until clearer frameworks emerge, physicians, health systems, and developers are left to navigate a landscape defined by legal ambiguity, uneven regulatory guidance, and the tension between innovation and accountability.

UNADDRESSED IMPACTS ON THE ENVIRONMENT

Artificial intelligence is considered the most resource-intensive digital technology, utilizing mass water consumption, energy, and raw material extraction.[36] Researchers at University of California, Riverside have estimated that global AI demand will utilize 1.1 trillion to 1.7 trillion gallons of fresh water by 2027.[37] It is impossible to ignore the use of natural resources tied to AI in Nevada, a state with a long, complex, and enduring history of water scarcity, which has recently made headlines, with Reno and Las Vegas ranking first and second in the nation for the fastest-increasing average annual temperatures in the country.[38]

The environmental footprint of AI is complex, spanning from the footprint of manufacturing and building the system infrastructure to the footprint of data processing, experimentation, and training.[39]

While many proposed AI ethics frameworks address issues of transparency, justice, fairness, non-maleficence, and privacy, these frameworks fail to address environmental impacts. Expanding ethical considerations to include environmental impacts may include the following:

- Formalized mechanisms to assess and evaluate the benefit to society of specific AI-programs against the potential or actual harm to the environment and human health;
- Environmental justice assessments to evaluate if disproportionate harm would fall on marginalized communities, and whether there is equity in the perceived or actual benefit from AI for these communities;
- Incentivization of eco-friendly development by exploring opportunities in regulation and governance, such as requiring industry actors to report resource utilization, emissions, and environmental waste; capping computational usage per company; and facilitating institutional offsets for resource usage.

A 2012 article found that Nevada experienced a six percent increase in heat-related mortality for every one-degree Fahrenheit increase in the heat index.[40] Changes to annual temperatures and changes to resource availability have direct ties to healthcare and health outcomes. When considering the benefits, risks, and ethical considerations of utilizing AI in healthcare, the inclusion of the environmental impact in AI ethics is an important piece of the equation.

36. Amelia Fiske et al., "Climate Change and Health: the Next Challenge of Ethical AI," *The Lancet Global Health* 13, no. 7 (2025): e1314-e1320, https://www.thelancet.com/journals/langlo/article/PIIS2214-109X(25)00124-X/fulltext.
37. Karen Hao, "AI Is Taking Water From the Desert," *The Atlantic*, March 1, 2024, https://www.theatlantic.com/technology/archive/2024/03/ai-water-climate-microsoft/677602/.
38. Jeffrey Meehan, "This Nevada City Is Heating up Faster Than Any in the US," *Reno Gazette Journal*, May 11, 2026, https://www.rgj.com/story/news/2026/05/11/nevada-city-fastest-warming-us/89781960007/.
39. Carole-Jean Wu et al., "Sustainable AI: Environmental Implications, Challenges and Opportunities," *Proceedings of Machine Learning and Systems* 4 (2022), https://proceedings.mlsys.org/paper_files/paper/2022/file/462211f67c7d858f663355eff93b745e-Paper.pdf.
40. Robert Repetto, "Economic and Environmental Impacts of Climate Change In Nevada," April 19, 2012, https://www.demos.org/sites/default/files/publications/NV_ClimateChangeInTheStates_Demos_0.pdf.

REGULATORY FRAMEWORKS

INTERNATIONAL LAW

The World Health Organization (WHO) and the International Telecommunication Union (ITU) partnered in 2018 to create the Focus Group on Artificial Intelligence for Health to address questions surrounding the use of AI in healthcare. In 2023, the group launched the Global Initiative on AI for Health with a mission to enable, facilitate, and implement AI in healthcare. Under this initiative, the WHO, ITU, and the World Intellectual Property Organization publish guidance documents and strategic initiatives to shape the integration of AI into healthcare.

Following suit, in 2025, the European Commission adopted the first European Union (EU) AI law, the EU Artificial Intelligence Act (AI Act). The law is the world's first comprehensive AI legislation and it seeks to support innovation while also protecting individuals. The AI Act classifies AI by risk, prohibits the use of certain AI systems, imposes obligations on developers of "high-risk" AI systems, and establishes governance within the European Commission.

In the healthcare context, almost all but the most benign AI systems are considered high risk under the AI Act, which imposes binding obligations on healthcare organizations, calls for structured, governance-focused AI policies, and creates a checklist-based methodology for the safe and ethical implementation of AI in clinical settings. When an AI system functions as a medical device, the AI Act must be satisfied simultaneously with existing regulatory frameworks. Similarly, for companies running international clinical trials, the AI Act intersects directly with existing data protection compliance obligations.[41] The regulation of AI does not operate in a vacuum, and its intersection with other regulations must be considered.

NATIONAL LAWS

The 21st Century Cures Act (Cures Act) was signed into law on December 13, 2016, and sets forth provisions to accelerate medical product development and innovation. Under the Cures Act, the Office of the National Coordinator for Health Information Technology (ONC) is responsible for implementing provisions relating to electronic health information blocking and interoperability. Key aspects of the ONC final rule include transparency requirements for the use of AI in certified health information technology, requiring developers to share information on fairness, validity, and effectiveness, and encouraging data standardization by adopting the United States Core Data for Interoperability, Version 3, as the new baseline standard within the ONC Health IT Certification Program. In parallel, the Centers for Medicare & Medicaid Services issued a final rule relating to patient access to data and interoperability. Any state or national AI regulation must account for interaction with existing laws or regulations such as these.

41. European Union, Artificial Intelligence Act, Regulation (EU) 2024/1689 (2024), https://artificialintelligenceact.eu/the-act/.

State policymakers should note that the federal government has taken action to limit state AI regulations. In December 2025, President Donald J. Trump signed an Executive Order titled *Ensuring a National Policy Framework for Artificial Intelligence*. The order:

- Directs the Attorney General to establish an AI Litigation Task Force to challenge unconstitutional, preempted, or otherwise unlawful state AI laws that may harm innovation.
- Directs the Secretary of Commerce to publish an evaluation of state AI laws that conflict with national AI policy priorities and withhold non-deployment Broadband Equity Access and Deployment Program funding from any state with such AI laws. Other agencies are directed to consider whether to make an absence of similar laws, or a policy of enforcement discretion with respect to any existing such laws, a condition of applicable discretionary grant programs.
- Instructs the Federal Trade Commission and Federal Communications Commission to take actions that will prevent states from requiring AI companies to engage in practices that could mislead consumers, including determining whether laws that force companies to embed Diversity, Equity, and Inclusion policies into their models cause those companies to violate the Federal Trade Commission Act, and considering whether to adopt a federal reporting and disclosure standard for AI models.
- Calls on Congress for the development of a national AI legislative framework that would preempt state AI laws that stifle innovation.

In March 2026, the White House also issued a set of legislative recommendations titled *A National Policy Framework for Artificial Intelligence*. The document outlines numerous policy suggestions to Congress, including policies to:

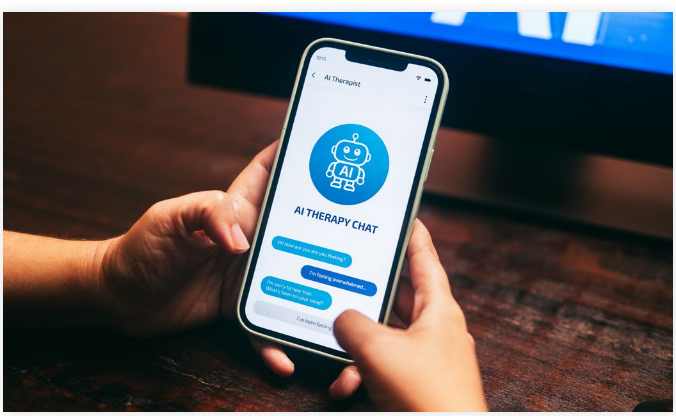
- Protect children and empower parents;
- Safeguard and strengthen American communities;
- Respect intellectual property rights and support creators, without undermining lawful innovation;
- Prevent censorship and protect free speech;
- Enable innovation and ensure American AI dominance;
- Educate Americans and develop an AI-ready workforce; and
- Establish a federal policy framework, preempting state AI laws that would impose undue burdens.

This document and future developments at the federal level should be monitored by state policymakers and legislatures.

POLICIES ENACTED BY OTHER STATES

Neighboring states have advanced measures to address the use of artificial intelligence in healthcare. In 2024, California enacted Assembly Bill 3030, requiring health facilities, clinics, and physician practices to disclose when AI is used to communicate clinical information about a patient's health status.[42] Arizona passed House Bill 2175, prohibiting health insurers from relying solely on AI to make medical-necessity or prior-authorization decisions.[43] Utah adopted a package of three AI-related healthcare laws, including:

- House Bill 452, regulating mental health chatbots by requiring clear AI disclosure, restricting advertising, and prohibiting the sale of personally identifiable health data;
- Senate Bill 226, narrowing disclosure obligations, requiring businesses to reveal AI use only in high-risk situations or when explicitly requested; and
- Senate Bill 332, extending the repeal date of the Utah Office of Artificial Intelligence Policy, which coordinates statewide AI regulation and oversees implementation of the Utah Artificial Intelligence Policy Act.[44]



Utah

Utah has also launched a pilot program, through Doctronic, utilizing AI to renew prescriptions for patients with chronic conditions, such as hypertension, diabetes, and depression.[45] The program is intended to address obstacles in accessing prescription renewals, such as provider shortages and cost barriers. Safeguards are built into the program, including human physician review of the first 250 patients and auditing of the first 1,000 patients, automatic escalation to clinicians of complex cases, and informed consent that patients are interacting with AI for any individual utilizing the program.

Source: See note 45.

42. Bryan Cave Leighton Paisner LLP, "California Turns to the Use of AI in Healthcare," February 13, 2025, https://www.bclplaw.com/en-US/events-insights-news/california-turns-to-the-use-of-ai-in-healthcare.html#_ftn1.
43. "Keeping Healthcare Human: How a New Arizona Law Will Protect Patient Care From AI," Arizona Medical Association, May 16, 2025, https://www.azmed.org/news/701312/Keeping-Healthcare-Human-How-a-New-Arizona-Law-Will-Protect-Patient-Care-From-AI.htm.
44. Carolyn Metnick and Arushi Pandya, "Utah Enacts AI Amendments Targeted at Mental Health Chatbots and Generative AI," *Healthcare Law Blog*, May 15, 2025, https://www.jdsupra.com/legalnews/utah-enacts-ai-amendments-targeted-at-7512117.
45. Michelle M. Mello, "Utah's Experiment With AI-Driven Prescription Renewals," *JAMA Health Forum* 7, no. 3 (2026): e261001, https://doi.org/10.1001/jamahealthforum.2026.1001.
46. Ibid.

AI IN NEVADA

Nevada became a legislative leader in the AI space when it enacted Assembly Bill 511 in 2011. The bill made Nevada the first state in the nation to authorize the operation of autonomous vehicles, which use AI. Significantly, the bill also codified the definition of "artificial intelligence" in the *Nevada Revised Statutes*, defining it as "the use of computers and related equipment to enable a machine to duplicate or mimic the behavior of human beings."

More recently, in 2025, the Nevada Legislature enacted Assembly Bill 406 to protect against the unethical or unsafe application of AI in clinical settings. The measure prohibits the false representation of a person or AI system as qualified to provide mental or behavioral healthcare. While also prohibiting AI systems from providing professional mental or behavioral healthcare services that require a license, AB 406 allows licensed clinicians to use AI to support administrative functions such as scheduling, billing, data analysis, documentation, and research, if all uses comply with state and federal privacy regulations.

Also in 2025, the Legislature passed Assembly Bill 325, which defines AI within the context of emergency management and establishes safeguards to ensure that final decisions regarding emergency response planning and resource allocation are not made solely by AI. Together, AB 406 and AB 325 reflect Nevada policymakers' commitment to responsible AI governance.

GOVERNANCE

The integration of AI into Nevada's healthcare system holds the potential to address workforce shortages, improve efficiency, and enhance patient outcomes. By automating repetitive administrative tasks, identifying at-risk patients, and supporting clinical decision-making, AI can enable healthcare professionals to focus more time and attention on direct patient care.

However, implementing these systems may pose significant challenges. Poorly designed AI could result in serious physical harm to patients or expose confidential and sensitive health information. Similarly, implementation must be accompanied by workforce training in digital skills, community engagement to maximize utilization, and sustainable investment and buy-in from both regulators and private industry. Because healthcare AI utilizes sensitive and personal health information, poses risks to patient and workforce safety, and is susceptible to algorithmic bias, policymakers will need to navigate how to thoughtfully govern AI use. Below are five governance domains in which healthcare AI operates:

Data Acquisition and Privacy: This domain covers the lifecycle of information used to train an AI system. In healthcare, it is closely regulated by the federal Health Insurance Portability and Accountability Act. It is vital to ensure data is sourced ethically, patients have consented to its use, and sensitive protected health information is sufficiently de-identified or encrypted. It is also necessary to assess the quality and representativeness of the training data to ensure the model learns from complete, unbiased records.

Example in Practice:

California enacted Assembly Bill 2013 in 2024, which requires developers of AI systems to publicly post information on the data used to train the AI system, including the source or owners of the datasets, the number of data points in the datasets, a description of the types of data points in the dataset, and whether the datasets include personal information.

Model Development and Tuning: This domain addresses the technical creation and refinement of an AI algorithm. This includes selecting the model architecture (e.g., a neural network for imaging or a regression model for risk scores) and training the model on historical data. Governance planning ensures that model tuning is conducted scientifically and that the model is validated against a separate set of "gold standard" data to demonstrate its accuracy before clinical use.

Example in Practice:

New York passed the RAISE Act, or Senate Bill 6953B, in 2025, which requires safety reports for powerful frontier artificial intelligence models, in order to minimize harm. Section 1421 requires specific transparency requirements for training and deployment of AI models, including written safety plans and the disclosure of safety incidents.

Clinical Integration and Workflow: This domain considers how the tool is used in a hospital or clinic. A perfect model may be useless or dangerous if it fails to match how doctors and nurses work. The key focus of this domain is the interoperability of the AI model with electronic health records, human-in-the-loop protocols (i.e., deciding if the AI suggests actions or acts autonomously), and the user interface. Effective governance ensures the AI tool reduces clinicians' workload rather than overburdening them with excessive information.

Example in Practice:

Illinois enacted the Wellness and Oversight for Psychological Resources Act, or House Bill 1806, in 2025, which narrows the permissible uses of AI systems in the provision of therapy or psychotherapy services. Specifically, the law provides that a licensed professional may not use AI systems to make independent therapeutic decisions, to directly interact with clients in any form of therapeutic communication, or to generate therapeutic recommendations or treatment plans without the review and approval of a licensed professional.

Example in Practice:

Arizona has proposed the Artificial Intelligence Nursing Innovation Pilot Program through House Bill 4080, which proposes a pilot program to test solutions in the field of nursing that can uphold current standards in patient safety and privacy, support improvements in patient outcomes, and assist the nursing workforce.

Patient Interaction and Consent: This domain governs the relationship between the AI and the individual patient or their data. It addresses the ethical shift from a human-to-human relationship to a human-to-AI-augmented relationship. Here, it is important that the patient provides informed consent for AI-driven treatments and understands why the AI made a specific recommendation. Good governance ensures that patients are notified when an automated system influences their care and that they have a path to better understand and then accept or reject an AI recommendation.

Example in Practice:

Tennessee passed Senate Bill 1580, which was signed and goes into effect July 1, 2026, which expressly prohibits chatbots from representing themselves as qualified mental health professionals, including medical professionals.

Example in Practice:

Maine enacted An Act to Ensure Transparency in Consumer Transactions Involving Artificial Intelligence, or House Paper 1154, in 2025, which prohibits the use of AI chatbots in commerce in a manner that may mislead or deceive consumers into believing they are interacting with a human being, unless the consumer is clearly and conspicuously notified that they are not engaging with a human being.

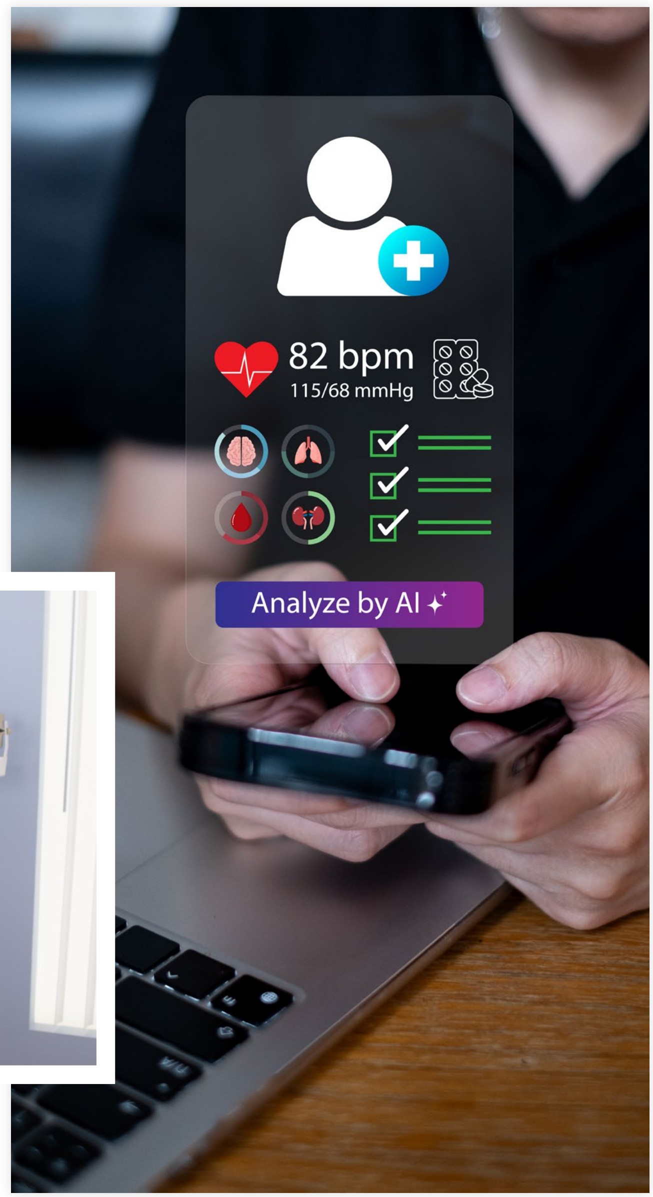
Lifecycle Management: This domain addresses the system's lifecycle oversight. It is vital to understand that AI is not a static tool; it is software that evolves as it works. Therefore, effective governance uses continuous monitoring to safeguard against model drift (when an AI becomes less accurate over time as patient demographics or medical practices change), version control (to track updates), and decommissioning (the protocol for turning the AI off if it begins to fail or becomes obsolete).

Example in Practice:

California enacted [Senate Bill 1120](#) in 2024, which among other things, enables the California Department of Health Care Services to inspect and audit AI tools used by health care services plans or disability insurers.

Example in Practice:

The requirements under the aforementioned New York RAISE Act ([S.B. 6953B](#)) include specific requirements on large developers to record and retain the specific test results and tests used in any assessment of the frontier model, and to further conduct annual reviews of their safety and security protocols.



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Below are questions for policymakers to consider in each of the above domains, across five areas of concern.

Governance Domain	Accountability and Oversight	Transparency and Explainability	Equity and Bias Mitigation	Safety and Clinical Validation	Regulatory and Legal Compliance
Data Acquisition and Privacy	Who owns the data? Who is responsible for breaches?	How was the data sourced? Are patients aware?	Does the training data represent diverse populations?	Is data quality high enough for clinical use?	Does the data collection and use meet federal or state privacy laws?
Model Development and Tuning	Who signs off on the final model version?	Can the AI's logic be audited or understood?	Are there "de-biasing" steps in the training phase?	How does the model perform against "gold standard" benchmarks?	Does the development process meet industry standards?
Clinical Integration and Workflow	Who is liable if a doctor follows a wrong AI suggestion, or ignores a correct AI suggestion?	Does the clinician see the "why" behind the AI output?	Does the tool work equally well across different clinical environments?	Does the AI cause "alert fatigue" or disrupt care?	Does the AI integration meet regulatory requirements for clinical use?
Patient Interaction and Consent	Who monitors the AI's effect on patient trust?	Is the patient told they are interacting with or being assessed by AI?	Does the AI offer the same quality of care to all demographics?	Are there safeguards for automated patient advice?	Does it meet informed consent requirements?
Lifecycle Management	Who monitors the model for accuracy "drift" over time?	Are performance updates logged and communicated?	Does the model's fairness decay for specific sub-groups?	How is the model "retired" or "rolled back" if it fails or degrades?	Are there ongoing audit trails for regulators?

Source: The above matrix and domain descriptions were synthesized by the Guinn Center using Google Gemini to extract and consolidate all policy recommendations from the World Health Organization's "Ethics and Governance of AI for Health," the National Institute of Standards and Technology's "AI Risk Management Framework (AI RMF 1.0)," and the European Commission's "Artificial Intelligence Act," all of which was subsequently verified by Guinn Center staff for accuracy and completeness.

CONCLUSION

The integration of AI into Nevada's healthcare system offers a powerful opportunity to address workforce shortages while improving patient health outcomes. However, the transition to an AI-augmented healthcare system is not without risk; poorly designed systems could expose sensitive patient information, lead to unintended inefficiencies, and even cause patient harm.

To successfully navigate the AI revolution, policymakers in the public and private sectors must carefully manage AI deployment, regulation, and governance—particularly in clinical settings. This endeavor at the state level will be complicated by federal efforts to control AI regulation at the national level. However, all stakeholders will be well served to be knowledgeable about the issues at hand and to seek opportunities to ensure thoughtful, effective, and safe AI use.

To successfully navigate the AI revolution, policymakers in the public and private sectors must carefully manage AI deployment, regulation, and governance—particularly in clinical settings.

APPENDIX

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This table is from the Guinn Center policy brief, *Artificial Intelligence: A General Overview of the History, Concepts and Applications of AI*, published in April 2024.

Understanding AI terminology is important when grasping the overall concept of AI and its many applications. Below is a list of key terms and concepts to provide more clarity.

TERM	DEFINITION	EXAMPLES
Machine Learning	A key field within artificial intelligence defined as "the part of AI that studies how computer systems can improve their perception, knowledge, decisions, or actions based on experience or data."	Common uses of machine learning include product recommendations on websites, email automation, and spam filtering.
"Strong" Artificial Intelligence (AI)	Artificial intelligence models can perform tasks with an intelligence equal to (or beyond) that of humans; currently, this AI is purely theoretical.	"If researchers are able to develop Strong AI, the machine would require an intelligence equal to humans; it would have a self-aware consciousness that has the ability to solve problems, learn, and plan for the future," according to IBM.
Transformer	A "neural net architecture," which allows for "powerful and computationally efficient analysis and generation of sequences" (such as words in a paragraph) via a flexible neural net architecture.	For example, when inputting the question "What is the color of the sky?" a transformer model identifies the relevancy and relationship between the words "color," "sky," and "blue." It uses that knowledge to generate the output: "The sky is blue." This technology is used in speech recognition and protein sequence analysis.
"Weak" or "Narrow" Artificial Intelligence (AI)	Artificial intelligence models that are trained to focus on and perform specific tasks. All current instances of AI fall under this category.	Digital assistants like Siri or Alexa are examples of weak or narrow AI, as is the facial recognition used by social media platforms or search engines.
Chatbot	A computer program that "simulates human conversation with an end user." Not all chatbots are equipped with AI, although the use of AI within chatbots has become increasingly common in recent years.	ChatGPT is an example of a chatbot powered by OpenAI. Additional chatbots powered by AI have since been released including Google Gemini. Chatbots can be used in a variety of circumstances and, within limits, can be tailored to address the specific needs of users. Government agencies can use chatbots to help citizens navigate services or to provide language translation.

TERM	DEFINITION	EXAMPLES
Computer Vision	A field of artificial intelligence that "enables computers and systems to derive meaningful information from digital images, videos, and other visual inputs," as well as process that information to take corresponding actions or make recommendations.	Facial recognition technology supported, in part, by computer vision techniques has been used increasingly by local law enforcement for improved identification of potential criminal suspects.
Deep Learning (DL)	"Deep learning is a method in artificial intelligence that teaches computers to process data in a way that is inspired by the human brain. Deep learning models can recognize complex patterns in pictures, text, sounds, and other data to produce accurate insights and predictions."	Deep learning enables several common AI uses, such as digital assistants, automatic facial recognition, the ability of self-driving cars to detect road signs and surroundings, and the detection of cancer cells in medical imaging.
Foundational Model	An emerging class of deep learning models that, rather than developing artificial intelligence from scratch, rely on existing data sets to understand language and create text and images.	The GPT-4 language model released by OpenAI is an example of a foundation model. It analyzes data from existing sources to synthesize its responses.
Generative Artificial Intelligence (GenAI)	Models within deep learning that, based on the data on which they are trained, can generate high-quality text, images, and other related content.	GenAI is becoming a key focus of local and state governments across the United States. Potential uses include fraud detection in healthcare claims and the simulation of tax records for training tax auditing AI through synthetic data generation.
GPT	Generative, Pre-trained Transformer.	Broader interest in AI was sparked in late 2022 with the launch of the ChatGPT chatbot by OpenAI, followed by their release of the language model GPT-4 in 2023. Government use of AI models such as ChatGPT is currently restricted in many cases due to ongoing data privacy concerns. However, some guidance has been developed to allow public sector officials to use these tools. Example prompts may guide employees to complete certain tasks, such as drafting press releases, generating summaries, and identifying interests of stakeholders, while limiting risks concerning data security and privacy.

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