



SCHOOL NURSING Fact Sheet

Legal Considerations for Harnessing the Power of Artificial Intelligence in School Health

Innovative artificial intelligence (AI) technologies have rapidly expanded across various industries, including healthcare and education. In the context of school health, AI technologies are being leveraged to improve student well-being, streamline administrative processes, and enhance the delivery of health services within educational settings. Although the potential benefits of these technologies are extensive, it is also important to recognize and address the possible risks associated with using them to fully capitalize on their benefits and promote safe and responsible usage.


This resource explores current applications of AI in school health and highlights potential benefits as well as some of the barriers that may arise during implementation. It also briefly describes the regulatory framework of AI technologies, including the FDA's oversight of medical AI, federal recommendations, and state regulations, and concludes with recommendations for promoting responsible and ethical use of AI in school nursing.

Overview of AI in School Nursing

AI generally refers to the long-standing field of computer science that uses data to program computer systems and enables them to mimic human problem-solving, learning, and thinking skills.¹ As AI rapidly evolves, its capabilities are increasingly utilized in the healthcare context. The types of AI that are more widely used in the school health setting include machine learning (ML) and predictive analytics, natural language processing (NLP), computer vision, wearable technologies, expert systems (clinical decision support software), and telemedicine and electronic health record (EHR) platforms that are enhanced with AI capabilities.

Machine Learning (ML)

Machine learning (ML) is a broad subcategory of AI that involves fitting models to data and training the models to learn as new data is integrated without being explicitly programmed.² ML programs develop algorithms that analyze data, detect patterns, and enable computers to learn and make informed decisions.³ Neural networks and deep learning (DL) are both more complex forms of ML.⁴ ML can be leveraged to analyze large quantities of student data in order to identify patterns that may indicate potential health risks.⁵

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- **Predictive analytics for mental health:** Machine learning AI programs can be trained with student data, such as social media activity, academic performance, and engagement with mental health services and professionals, to identify students at risk of developing mental health problems.⁶ ML models have proven to be effective at identifying a child's mental health outcome based on factors such as exposure to violence, trauma history, and demographic characteristics.⁷ Various school districts in Washington, D.C. are piloting the use of AI-based tools to identify students at risk for suicide and self-harm.⁸
 - **Chronic disease management:** ML models can predict the onset and potential exacerbations of chronic conditions such as asthma or diabetes.⁹ The efficacy of AI models in predicting the occurrence of chronic diseases is well-documented.¹⁰ For example, AI programs have proven effective at predicting the severity of diseases and their associated symptoms in children.¹¹

Natural Language Processing (NLP)

Natural language processing (NLP) programs encompass various applications, such as speech recognition, text analysis, translation, and other programs that simulate the output of human language.¹² These software programs are trained on large bodies of language, and more recent developments in NLP programs have leveraged deep learning neural networks to improve recognition accuracy.¹³ NLP programs are more commonly known as generative AI and include the category of chatbots.¹⁴


- Integrating AI and other innovative technologies in the educational experience can empower students to take control of their learning process.¹⁵ Despite the general concern shared over the ability of students to use NLP programs to cheat on assignments, there is also the potential to leverage these programs for productive purposes, such as generating reading assignments or providing feedback to students during the learning process.¹⁶ Using AI chatbots in the classroom also allows teachers to cater to unique individual student needs and can provide time-saving administrative assistance.¹⁷
- The emergence of sophisticated chatbot systems has resulted in widespread adoption of these programs across various industries, notably in providing mental health services.¹⁸

Computer vision

Computer vision (CV) is a type of AI that uses computers to interpret and understand visual stimuli.¹⁹ CV systems leverage convolutional neural networks (CNNs), which process large amounts of data to enable computers to detect, classify, and track objects in images and videos.²⁰ CV programs aim to mimic human vision and replicate how humans perceive and make sense of what they see.²¹

- Computer vision AI is currently used in healthcare to aid in imaging diagnostics, patient symptom tracking, and illness progression tracking.²² Research is investigating the potential for CV systems to improve medication management²³ and exploring how CV technologies can be leveraged to improve hearing and vision screenings.²⁴
- CV systems are used alongside deep learning models in educational settings to support online exam administration and detect cheating.²⁵ Additionally, research is exploring the potential benefits of implementing CV systems to monitor student engagement in the classroom.²⁶

Wearables (Remote Patient Monitoring Devices)



Wearable technologies collect real-time biometric data and connect to a network, facilitating continuous monitoring and analysis.²⁷ Common wearable devices include smart glasses, watches, and rings.²⁸ These devices may be equipped with AI that analyzes collected data and provides valuable health insights to healthcare providers to help them make more efficient and accurate decisions.²⁹ These devices are particularly useful in managing chronic conditions as they can track health measures such as glucose levels, heart rate, blood pressure, temperature, physical activity levels, etc.³⁰

- Internet of Things (IoT) sensors are employed to monitor environmental conditions, like air quality, which can be particularly important in monitoring and treating students with respiratory conditions.³¹

Expert Systems

Expert systems are software programs equipped with AI and designed to simulate human decision-making capabilities.³² Expert systems are more commonly known as clinical decision support (CDS) software. Many expert systems are based on collections of “if-then” rules, known as rules-based algorithms, and require human oversight.³³ These systems can provide valuable evidence-based decision support to school health professionals by analyzing symptoms and biometric data and proposing potential diagnoses or treatment recommendations.³⁴


Telemedicine and EHR Platforms Enhanced by AI

With the integration of AI, telemedicine platforms provide advanced capabilities for remote consultation and monitoring, making them a potentially valuable tool for school health professionals, particularly those in rural or underserved areas.³⁵ Additionally, several EHR platforms are currently in development with built-in AI capabilities to assist healthcare providers in their decision-making process.³⁶ Using AI-enhanced EHR platforms to exchange student data, including attendance data, between school health professionals and other healthcare providers can improve care coordination among all providers involved in a student’s health care.³⁷ This is particularly significant in light of the increase in chronic absenteeism, as school-based telehealth has proven to be a valuable tool to reduce the likelihood of chronic absenteeism.³⁸

Barriers to Adoption and Inherent Risks

While using innovative AI-based software programs and devices can revolutionize the way healthcare services are provided to students in the school setting, it is important to acknowledge the obstacles hindering widespread adoption and address the associated concerns and inherent risks. Establishing protective measures when implementing AI-based programs in school health and other educational settings is crucial to ensure these programs are used safely and responsibly.

- **Privacy and Data Security**—With the rise of hacking and ransomware attacks that have accompanied the expansion of advanced technologies, schools implementing AI systems must take proper measures to ensure student data is stored securely.³⁹ School nurses typically collect sensitive health information, which should be protected from cybersecurity threats that may accompany AI programs. Schools must also ensure that any AI programs implemented comply with federal privacy laws such as the Family Educational Rights and Privacy Act (FERPA) and the Health Insurance Portability and Accountability Act (HIPAA). If AI




systems are used in schools or school health settings, clear data collection, use, and storage guidelines should be established.⁴⁰ Privacy concerns may also arise as more AI systems are used in schools. For example, schools are exploring how to leverage AI surveillance programs to address the increase in school shootings.⁴¹ However, these programs may present a heightened risk of identifying “false positives,” i.e., flagging innocent students as potential threats, which may infringe on students’ privacy rights.⁴²

- **Ethical Concerns**—Many AI programs are susceptible to racial biases that may exacerbate existing disparities. This risk may be present if racially correlated variables are used in computations or may result from the quality of data used to train a program.⁴³ For example, if vulnerable populations are underrepresented in data used to train a model, this bias will affect the program’s outcome or recommendation. Schools and school nurses looking to implement these tools should be mindful of the risk of bias and carefully assess a program’s reliability before adopting it.
 - In November 2024, the United States Department of Education’s Office for Civil Rights issued guidance to aid school communities in implementing AI programs and ensuring they are used in a nondiscriminatory manner.⁴⁴ However, the Trump Administration has since rescinded the guidance and other AI civil rights protections.⁴⁵
- **Equity Concerns**—As the integration of AI programs and applications in educational settings becomes more widespread, there is growing concern about the possibility of exacerbating existing inequities if these advanced technologies are not implemented carefully.⁴⁶ Students from lower-income families may have limited access to technological resources compared with their peers. Consequently, if not implemented in a way that intentionally centers equity, disparities in education and health services provided to students from different socioeconomic backgrounds will widen as these technologies become more prevalent.
- **Integration with Existing Systems**—Implementing AI in school health requires seamless integration with existing health and education systems, which may be complex and resource-intensive.⁴⁷
- **Training and Support**—School health staff and educators may require specialized training to use AI tools effectively. Ongoing IT support and professional development will likely be important for the successful adoption of AI-based programs in schools.⁴⁸

Regulatory Framework

FDA Regulation of AI in Medical Products

The Federal Food and Drug Administration (FDA) is responsible for ensuring the safety and efficacy of most AI-based medical products before they are available for use by the public.⁴⁹ When subjecting a medical device to regulatory review, the agency primarily considers a software’s intended use and the potential risks it poses to users.⁵⁰ Most medical devices that rely on ML are regulated as Software as a Medical Device (SaMD).⁵¹ AI-based software programs are subject to FDA review based on their risk classification—Class I, II, or III—with Class III devices posing the highest risk.⁵² Once an AI-enabled medical device is on the market, the FDA employs a risk-based approach to assess the need for additional evaluation of any modifications, including substantial changes to a device’s underlying algorithm.⁵³



Additionally, the FDA regulates clinical decision support (CDS) software. CDS software is defined as technologies that inform healthcare providers and patients with “person-specific information, intelligently filtered or presented at appropriate times to enhance health and healthcare.”⁵⁴ Congress passed the 21st Century Cures Act in 2016,⁵⁵ which exempts certain types of CDS software from FDA review, leaving these devices essentially unregulated, including some CDS software programs embedded with AI capabilities.⁵⁶


Whether a CDS software program is subject to FDA review depends on whether the software informs a healthcare provider’s independent decision or provides insights that drive a provider’s decision-making.⁵⁷ It may be difficult to assess whether a software program is informing versus driving a provider’s decision-making.⁵⁸ Since the passage of the 21st Century Cures Act, the FDA has issued various guidance documents interpreting their authority to regulate CDS programs.⁵⁹ Additionally, the agency continues to solicit information regarding how it can improve its approach to regulating novel and advanced technologies used in the healthcare industry. However, “medical devices” and software programs that are not subject to FDA review continue to pose a risk to individuals whose medical care may involve the use of these technologies.

Federal Regulations

In lieu of a comprehensive federal legislative framework regulating the use of AI products, the federal government has released various guidance documents to facilitate the responsible and ethical use of AI technologies across all industries. The first of these is the Blueprint for an AI Bill of Rights.⁶⁰ The Bill of Rights illuminates principles to guide the responsible and safe implementation of automated systems.⁶¹ These principles include recommendations for developing safe and effective AI programs, protections from algorithmic discrimination, and protections against abusive data practices, including recommendations for the safe collection, use, storage, and transfer of personal data.⁶² Additionally, the Blueprint recommends that individuals receive notice and explanation when automated systems are used and advises that individuals should have the option to opt-out of the use of automated systems in favor of a human alternative.⁶³ The Blueprint also provides suggestions for addressing various ethical and equity concerns that may arise as reliance on automated systems increases.⁶⁴

Additionally, the Biden Administration issued a comprehensive Executive Order (EO) regarding the Safe, Secure, and Trustworthy Development and Use of Artificial Intelligence (EO 14110) on October 30, 2023.⁶⁵ This EO coordinated a federal government-wide approach to ensuring that AI systems are developed and used safely and responsibly across all industries.⁶⁶ The focus of this EO was to promote responsible innovation while recommending safeguards that mitigate the risks inherent in these technologies.⁶⁷ Moreover, the EO established important civil rights and equity protections to reduce the risk of discrimination and bias that may arise when automated systems are used.⁶⁸

While civil rights protections were at the forefront of the Biden Administration’s efforts to regulate AI, the Trump Administration has since abandoned these initiatives for a deregulatory, hands-off approach. President Trump signed Executive Order 14148, rescinding over 75 of President Biden’s former actions.⁶⁹ Trump subsequently issued a second EO—Removing Barriers to American Leadership in Artificial Intelligence⁷⁰ where he described Biden’s earlier EO 14110 as “dangerous” and “unnecessarily burdensome.”⁷¹ This EO directs government departments and agencies to “revise or rescind all policies, directives, regulations, orders, and other actions taken under EO 14110 that are inconsistent with enhancing America’s leadership in AI.”⁷² EO 14179



additionally grants broad discretion to the Assistant to the President for Science and Technology (APST), the Special Advisor for AI and crypto, and the Assistant to the President for National Security Affairs (APNSA) to evaluate and rescind any agency actions taken under Biden’s EO 14110 that they deem inconsistent with the “policy of the United States to sustain and enhance America’s global AI dominance in order to promote human flourishing, economic competitiveness, and national security.”⁷³

While the implications that these recent actions will have on the safety and reliability of AI remain to be seen, school systems and school nurses should be mindful of the potential discriminatory impact that AI models may be vulnerable to in light of these efforts. These new policies will likely shift the burden to those implementing AI programs to ensure they implement safe and reliable AI and mitigate any discrimination-related risks.

State Regulations

As AI programs continue to advance and integrate across various sectors, state legislatures and agency departments are also focusing on AI regulation. Approaches to state legislation and state agency policies regulating the use of AI vary significantly from state to state, with most states enacting policies aimed at minimizing perceived risks while capitalizing on technological advancements and driving innovation.


Legislation

State legislatures across the U.S. are moving quickly to introduce and pass legislation focused on AI to effectively address concerns about its misuse and unintended consequences while also promoting continued innovation. During the 2023 legislative session, at least half of the states introduced AI bills, and 18 states and Puerto Rico adopted or enacted legislation.⁷⁴ The relevant categories of AI-focused state legislation include education/training (implementing education or training programs to develop skills or knowledge in AI); health use (legislation focused on the use of AI in health care or by health care professionals); oversight/governance (legislation that may require an office or agency to supervise or oversee the use of AI and ensure its responsible use); responsible use (legislation that prohibits the use of AI tools that contribute to any type of algorithmic discrimination or unjustified differential treatment); and studies (legislation that requires ongoing studies of AI issues or mandates the creation of a task force, advisory body, commission, or other oversight entity).⁷⁵

Department of Education Policies

State agencies are also actively implementing regulations and policies that govern the use of AI in specific industries. Many states are taking steps to regulate the use of AI technologies in K-12 educational settings.⁷⁶ State education departments have taken various approaches to regulating in this emerging field.⁷⁷ Some states are considering mandates that require school districts to establish their own policies regarding the use of AI,⁷⁸ while others have chosen to impose statewide bans on certain forms of AI technology in schools, such as facial recognition software programs.⁷⁹ Additionally, some states/districts have opted for complete bans on the use of AI in schools, while others have issued guidance for appropriate and responsible usage of AI in educational settings.⁸⁰

Best Practices for Using AI in School Nursing Ethically and Responsibly



Using AI programs in school nursing and education can enhance healthcare delivery, streamline administrative tasks, and improve student outcomes. However, AI implementation should proceed cautiously, considering privacy and ethical concerns. Recommendations for best practices when using AI programs in school nursing include:

- Maintaining human oversight of AI programs;⁸¹
- aligning AI models to fit educators' vision for learning;⁸²
- ensuring data privacy and security compliance;⁸³
- providing notice and explanation when AI programs are used;⁸⁴
- protecting against algorithmic discrimination;⁸⁵
- involving transparency and using high-quality, disaggregated data in the development process;⁸⁶
- ongoing research assessing the safety and efficacy of AI-based products;⁸⁷
- regular auditing and testing of AI algorithms to assess for bias⁸⁸; and
- developing education-specific guidance and guardrails around AI use.⁸⁹

Conclusion

Artificial intelligence is a powerful tool, one that has the potential to revolutionize school health services and improve the health and well-being of students across the country. AI-generated student data (e.g., attendance, behaviors, and symptoms) can assist school nurses and school officials in identifying at-risk children and adolescents by identifying patterns and enabling proactive intervention and care. AI can improve efficiency by streamlining administrative tasks and facilitating communication among students, parents, and school officials. As with all new interventions, school districts must implement AI carefully and with full realization of its potential legal and ethical pitfalls. The potential privacy and data security risks are significant, and school health providers must acknowledge the ethical concerns, particularly the risk of bias and discrimination. As federal oversight of AI shifts toward a more deregulatory approach, school health providers must consider the quality and reliability of any AI models they adopt. Understanding these issues and incorporating legal and ethical considerations into AI use will help ensure compliance with state and federal law, and protect students and their health information.

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- ⁶¹ *Id.* at 4.
- ⁶² *Id.* at 5-6.
- ⁶³ *Id.* at 6-7.
- ⁶⁴ *Id.* at 9.
- ⁶⁵ White House Press Briefing, *Executive order on the safe, secure, and trustworthy development and use of artificial intelligence* (EO 14110) (October 30, 2023), <https://www.whitehouse.gov/briefing-room/presidential-actions/2023/10/30/executive-order-on-the-safe-secure-and-trustworthy-development-and-use-of-artificial-intelligence/>.
- ⁶⁶ *Id.*
- ⁶⁷ *Id.* at Sec. 2(b).
- ⁶⁸ *Id.* at Sec. 2(d).
- ⁶⁹ Exec. Order No. 14148, 90 Fed. Reg. 8237 (Jan. 20, 2025), <https://www.federalregister.gov/documents/2025/01/28/2025-01901/initial-rescissions-of-harmful-executive-orders-and-actions>.
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- ⁷¹ The White House, *supra* note 49.
- ⁷² *Id.*
- ⁷³ Exec. Order No. 14179 (Sec. 5), *supra* note 77.
- ⁷⁴ National Conference of State Legislatures, *Artificial Intelligence 2023 legislation* (updated January 12, 2024), <https://www.ncsl.org/technology-and-communication/artificial-intelligence-2023-legislation>.
- ⁷⁵ *Id.*
- ⁷⁶ Jeremy Roschelle et al., *Review of guidance from seven states and AI in education* (February 2024), <https://digitalpromise.dspacedirect.org/server/api/core/bitstreams/654a148a-25c4-4eec-bb8e-2fd1948130a5/content>.
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- ⁷⁹ New York State Education Department, *State education department issues determination on biometric identifying technology in schools*, Press Release (September 27, 2023), <https://www.nysed.gov/news/2023/state-education-department-issues-determination-biometric-identifying-technology-schools#:~:text=New%20York%20State%20Education%20Department%20Commissioner%20Betty%20A.,or%20utilizing%20facial%20recognition%20technology>.

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⁸¹ Miguel A. Cardona et al., *supra* note 35, at 53-54.

⁸² *Id.* at 54

⁸³ *Id.* at 8

⁸⁴ *Id.* at 55

⁸⁵ *Id.*

⁸⁶ The White House Office of Science Technology Policy, *Algorithmic discrimination protections* (nd), <https://www.whitehouse.gov/ostp/ai-bill-of-rights/algorithmic-discrimination-protections-2/>.

⁸⁷ Miguel A. Cardona et al., *supra* note 35, at 57.

⁸⁸ *Id.* at 42.

⁸⁹ *Id.* at 60.

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