

Complexities of artificial intelligence in health care

The rise of artificial intelligence (AI) has the potential to drastically improve physicians' professional lives. With the release of ChatGPT—a generative AI tool that engages in human-like conversation equipped with the vast knowledge of the Internet—public attention has been captivated, along with mixed feelings of fear and awe regarding future implications.

At its core, the power of modern-day AI lies in its ability to self-learn and recognize patterns. Combined with fast computational speed and a seemingly limitless memory, AI programs work much like a human mind by anticipating problems, adapting, and learning from past mistakes. Recently, this formidable tool has made strides in health care. While AI solutions expand and work toward optimizing patient care, it is especially important that policy keeps up with this technological surge to ensure effective and safe implementation in our health care system.

AI in health care is developing rapidly, particularly in the realm of automating routine tasks. For example, primary care and emergency physicians are overwhelmed with patients. AI's ability to assist in paperwork, prioritize labs, and solve scheduling challenges should alleviate administrative burden and release time back to physicians. Administrative load remains a significant contributor to physician burnout and compassion fatigue, as highlighted by the Canadian Medical Association's National Physician Health Survey.¹ Companies have

created tools to address these concerns—for example, automatic SOAP notes, where AI listens in on a patient encounter, analyzes it, and organizes points into a chart instantaneously. Some applications are integrated with scheduling, allowing follow-up appointments, lab requisitions, and specialist referrals to be sent out by voice. The time saved allows physicians to focus on human interaction in patient care, without sacrificing efficiency.

AI's development in diagnostics may be the most incredible. The Massachusetts Institute of Technology trained a program with over 32 000 mammogram images of women diagnosed with cancer. The algorithm demonstrated remarkable accuracy in detecting disease presence and subtleties often incomprehensible to humans.²

The utility of such tools is exciting; however, concerns regarding data quality and security persist. If poor-quality, biased, or incomplete data is used during the algorithm, AI may perpetuate or exacerbate social inequities present in our health care system today, leading to a phenomenon known as “algorithmic bias,” as termed by Harvard University.³

Additionally, security risks may occur during construction of AI algorithms, which have historically lacked privacy measures. A notable instance was when DeepMind (an AI company owned by Google) partnered with the Royal Free London NHS Foundation Trust to use machine learning in management of acute kidney injury.⁴ The UK's Department of Health and Social Care noted that no privacy measures were discussed, and patient data was obtained on an “inappropriate legal basis.” Google took control of DeepMind's application, transferring control of patient data from the UK to the US. While the actions taken were legal, it is reasonable to believe individuals

would have concerns about their health data being used in this manner.

As AI in health care evolves, policy frameworks must adapt to ensure ethical, legal, and societal considerations are addressed in tandem with technology. Policies may differ between provinces. In March and April 2024, the College of Physicians and Surgeons of BC issued two statements, one for all registrants and one specific to registrants who work in diagnostic facilities. During medical encounters, registrants may use AI, adhering to principles such as privacy, confidentiality, and consent.⁵ Importantly, physicians will maintain responsibility for interpreting and making final decisions about patient care. For registrants working in diagnostic facilities, only AI approved by the Diagnostic Accreditation Program may be used as supplementary aids for triage, diagnostics, and quantifying aspects in practice.⁶ For BC, this is a great step in the right direction.

The ever-evolving nature of AI requires continuous reassessment of regulatory frameworks from a multidisciplinary lens of law, ethics, and medicine. By being aware of developments, we can harness the power of AI while prioritizing patient-physician benefit, societal trust in our health care system, and ethical standards. ■

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Continued on page 180

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risk of heat-related illness is the highest. During these periods, workers should be instructed to take more breaks and implement precautions to a greater degree than normal as they slowly acclimatize to hotter weather. Some measures to prevent heat stress include staying hydrated, taking frequent breaks in a cooler environment, wearing loose-fitting and light-colored clothing made of cotton or silk, and learning to recognize and act on early signs and symptoms of heat stress.

Providers may also inform workers that their employers have a responsibility to protect them from heat exposure. Employers should be training workers on signs and symptoms of heat stress; providing cool potable water; regularly monitoring thermal conditions; allowing frequent breaks; adjusting work scheduling, workload, or duties to reduce the risk of heat stress to workers; and removing workers from the hot environment if they show signs or report symptoms of heat stress (see more examples at www.worksafebc.com).

[.com/en/health-safety/hazards-exposures/heat-stress](https://www.worksafebc.com/en/health-safety/hazards-exposures/heat-stress)). If you're concerned that a worker is subjected to unsafe work, you can inform them that they have a right to refuse unsafe work and may contact the Prevention Information Line at WorkSafeBC, either online at <https://prevruw.online.worksafebc.com> or by phone at 604 276-3100 (Lower Mainland) or 1 888 621-7233 (toll-free).

Heat-related illness early recognition and action

Providers should educate patients on the stages of heat-related illness so they can recognize signs and symptoms early and take action to prevent progression. See the **Box** for four common heat-related syndromes and the corresponding measures to take. ■

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Suggested reading

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Continued from page 177

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Continued from page 178


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