Augmented intelligence (AI) has achieved an increasingly important role in health care in recent years, yet there is still no consensus on guiding principles for its development and deployment, which might leave some physicians wondering which AI systems are right for their practices.

An open-access, peer-reviewed essay published in the *Journal of Medical Systems* summarizes the goals and values that AI—also often called artificial intelligence—should help advance in health care. It turns out they aren’t new. Physicians have known them for years as the Quadruple aim.

Learn more about artificial intelligence versus augmented intelligence and the AMA’s other research and advocacy in this vital and emerging area of medical innovation.

### Enhance the patient experience

Trustworthy AI empowers patients to make informed decisions about their care, ensures that their rights are respected, and its usage improves their clinical outcome, quality of life and satisfaction, the essay notes.

“Think about what constitutes the earliest stage of the patient encounter—it often starts with symptoms and a differential diagnosis,” said Kathleen Blake, MD, MPH, one of the essay’s authors and a senior adviser at the AMA. “If the time and number of steps required to reach the correct diagnosis are reduced, that can reduce the period of uncertainty, enhance the patient experience, lead to earlier access to treatment and earlier likelihood of improvement. Fewer tests may also mean lower costs for the patient. So, the right AI can get you where you and your patient need to be sooner.”

Find out why, to identify health care AI physicians can trust, it’s important to answer these three questions.
Improve population health

Ideally, health care AI “addresses high-priority clinical needs and advances health equity by reducing disparities rooted in historical and contemporary injustice and discrimination, helping all patients inclusive of identity and socioeconomic factors,” wrote the authors, who developed the framework during their tenure at the AMA.

“If we measure health outcomes on a given issue in the population as a whole, we might say, ‘It looks like we’re doing pretty well,” Dr. Blake said. “But what we've learned in recent years—especially with COVID-19—is that outcomes can vary widely in subpopulations.”

Consider, for example, maternal outcomes for Black women or asthma outcomes for children who live in poorly maintained housing.

“AI can help health care and public health organizations direct resources to issues and populations where inequities are observed and you’re not getting the outcomes you want,” she said.

Reduce costs

“Oversight and regulatory structures account for the risk of harm and benefit posed by health care AI systems,” the authors wrote. “Payment and coverage [are conditioned] on following laws and regulations, providing appropriate levels of clinical validation and high-quality evidence, and advancing affordability and access.”

This is where, for example, AI tools that augment the accuracy of CT scans used to screen for lung cancer come in, Dr. Blake said. Imaging studies don't treat cancer, but can result in earlier detection and contribute to better outcomes.

“The challenge is, how do you measure cost?” she added. “Some might measure it based on what a patient would have spent over, say, the following two years, while others think it should be a longer time horizon. But don’t get stuck on that. We can all agree that we want to prevent bad things from happening to people.”

Improve the work life of clinicians
“Physicians are engaged in developing and implementing health care AI tools that augment their ability to provide high-quality, clinically validated health care to patients and improve their well-being,” the authors wrote. “Barriers to adoption, such as lack of education on AI and liability and payment issues, are resolved.”

The key word in augmented intelligence, Dr. Blake said, is “augmented.”

“AI tools should augment one’s ability to provide better care to patients,” she said. “Take the example of diabetic retinopathy. Nonophthalmologists now have a way, in their office, to screen patients for diabetic retinopathy. Patients whose scans show signs of problems are referred to an ophthalmologist for early treatment, preserving vision and avoiding harm. That’s a very satisfying feeling.”

A companion AMA webpage features additional highlights from the essay, as well as links to relevant opinions in the AMA *Code of Medical Ethics*.

Learn more about the AMA’s commitment to helping physicians harness health care AI in ways that safely and effectively improve patient care.