

**A SOURCE OF DEFERENCE OR INTERFERENCE?:
AN INVESTIGATION OF THE IMPACT OF
MEDICAL ARTIFICIAL INTELLIGENCE ON THE
STANDARD OF CARE**

ALIAH RICHTER[†]

Artificial intelligence's (AI's) capacity to optimize patient health outcomes has gained significant notoriety within the health care industry. However, known risks of AI employment in clinical practice prompt questions about who should be held liable when patient care goes awry. Traditional doctrines of tort liability may be inadequate to resolve these questions, but modifications to the standard of care have been suggested. To assess physicians' liability risk in the advent of AI, as well as understand how interests in optimizing clinical care, redressing patient harms, and incentivizing technological innovation can best be balanced, this Note analyzes the legal and policy implications of different standard of care modifications. To start, this Note discusses the importance of understanding the standard of care and how it may change with medical AI adoption. This Note then evaluates three ways AI may modify the standard of care and concludes that the standard of care should preserve providers' choice to rely or not rely on AI and scrutinize its recommendations, as well as require review of AI-based systems before application in clinical practice. Based on the recognition that physicians may struggle to properly review AI tools, this Note ends by offering recommendations to aid this critical requirement.

[†] Aliah Richter is a third-year law student at The Ohio State University. I would like to thank my faculty advisor, Efthimios Parasidis, for his guidance throughout the research and writing process, my mentor, Dave Abromowitz, for giving me access to his healthcare legal resources to make this publication possible, and the Ohio State Technology Law Journal for providing me with invaluable support as a staff editor.

I.	INTRODUCTION	167
II.	MEDICAL AI MAY MODIFY THE STANDARD OF CARE.	170
A.	What Is the Standard of Care?	171
B.	AI's Future Impact on the Standard of Care Is Unclear, but Critical 172	
III.	FIRST PROPOSAL: REQUIRING PHYSICIANS TO ACCEPT AI RECOMMENDATIONS	173
A.	Mandating Compliance with Medical AI May Shift the Burden of Proof on Physicians but Reduce Their Risk of Malpractice Liability Overall	174
B.	AI's Incorporation Into the Standard of Care May Hurt Patients' Chances of Recovery in Court, Heighten Physicians' Risk of Overreliance and Liability, and Reduce the Quality of Patient Care	175
C.	It Is Unlikely the Standard of Care Will Be Raised to Require Physicians' Acceptance of Medical AI Recommendations	180
IV.	SECOND PROPOSAL: REQUIRING PHYSICIANS TO CONSULT AND MEANINGFULLY REVIEW MEDICAL AI RECOMMENDATIONS	180
A.	Required Consultation and Review of AI Reduces Fears of Liability Among Physicians, Enhances Balanced Decision-Making, and Strengthens the Patient-Physician Relationship	181
B.	Undeveloped Evaluation Tools, Time Constraints in Clinical Settings, and Health Disparities Challenge AI Consultation and Meaningful Review Requirements	183
C.	Allowing Providers to Second-Guess AI Recommendations May Improve Patient Health Outcomes, but Issues Remain When AI Consultation Is Required, and the Definition and Practicality of "Meaningful" Review Are Unclear	185
V.	THIRD PROPOSAL: REQUIRING PHYSICIANS TO EXERCISE REASONABLE PRUDENCE WITH OR WITHOUT MEDICAL AI.....	185
VI.	RECOMMENDATIONS	187
VII.	CONCLUSION	189

I. INTRODUCTION

On October 30, 2023, President Biden issued an Executive Order to establish standards for artificial intelligence (AI) safety and security as part of a larger promotion of responsible innovation and competition.¹ This landmark Executive Order recognized the rapid adoption of AI in the United States. As part of the Fourth Industrial Revolution, AI use is even expanding worldwide in nearly every industry.² Healthcare, in particular, poses as one priority area for the development and employment of AI.³ As of March 2021, 90% of hospitals planned for or implemented AI strategies.⁴

Healthcare institutions may largely welcome AI advancements due to an increasing demand for healthcare services amid a shortage of physicians in the United States.⁵ Over 33% of hospitals and imaging centers reported using AI, machine learning, or deep learning for patient care or business operations.⁶ Medical AI may also optimize diagnosis and treatment and improve the quality of patient care overall. Since 2017, the Food and Drug Administration has endorsed twenty-nine (and counting) algorithms for clinical use in detecting atrial fibrillation and breast cancer, tracking insulin dosage, recognizing sleep disorders, diagnosing autism in kids, and treating substance abuse disorders.⁷ AI

¹ *FACT SHEET: President Biden Issues Executive Order on Safe, Secure, and Trustworthy Artificial Intelligence*, THE WHITE HOUSE (Oct. 30, 2023), <https://www.whitehouse.gov/briefing-room/statements-releases/2023/10/30/fact-sheet-president-biden-issues-executive-order-on-safe-secure-and-trustworthy-artificial-intelligence/> [https://perma.cc/MJN7-NU6E].

² Klaus Schwab, *The Fourth Industrial Revolution: What It Means, How to Respond*, WORLD ECON. F. (Jan. 14, 2016), <https://www.weforum.org/agenda/2016/01/the-fourth-industrial-revolution-what-it-means-and-how-to-respond/> [https://perma.cc/6V6X-24C4].

³ Robert Challen et al., *Artificial Intelligence, Bias and Clinical Safety*, 28 *BMJ QUALITY & SAFETY* 231, 231 (2019).

⁴ Jessica Kent, *90% of Hospitals Have Artificial Intelligence Strategies in Place*, HEALTH IT ANALYTICS (Mar. 11, 2021), <https://healthitanalytics.com/news/90-of-hospitals-have-artificial-intelligence-strategies-in-place> [https://perma.cc/8H8A-JA6M].

⁵ Darrell G. Kirch & Kate Petelle, *Addressing the Physician Shortage: The Peril of Ignoring Demography*, 317 *J. AM. MED. ASS'N* 1947, 1947 (2017).

⁶ Jessica Kent, *One-Third of Orgs Use Artificial Intelligence in Medical Imaging*, HEALTH IT ANALYTICS (Jan. 28, 2020), <https://healthitanalytics.com/news/one-third-of-orgs-use-artificial-intelligence-in-medical-imaging> [https://perma.cc/53L6-8UJU].

⁷ Bertalan Mesko, *FDA Approvals for Smart Algorithms in Medicine in One Giant Infographic*, THE MED. FUTURIST (June 6, 2019), <https://medicalfuturist.com/fda-approvals-for-algorithms-in-medicine/> [https://perma.cc/H9YF-UP7Z] (“[I]n 2017,

has also been employed in the form of Virtual Health Assistants⁸ and, famously, IBM's Watson for Oncology, which interprets clinical information of cancer patients and suggests individual treatment options.⁹ Clinical decision support systems (CDS) also remain popular tools among healthcare practitioners to make better-informed medication, lab, and medical imaging orders.¹⁰

Clearly, AI has the potential to revolutionize the healthcare industry, but it also poses substantial risks to patient care. Data privacy and security have always constituted major concerns in clinical practice, but the use of AI-based systems augments the risk of confidential patient information breaches.¹¹ AI-based system development founded on biased data collection could also lead to distorted outcomes that result in subpar clinical care.¹² When non-representative data is input into algorithms to make the AI software biased, it follows that "AI only replicates the racial, gender, and age prejudice which already exists in our society, therefore widening the gap between the rich and the poor."¹³ Further, since most research on medical AI has been conducted in non-clinical settings, there is a lack of empirical data to show how patients are truly impacted by AI.¹⁴

six new algorithms were approved by the US regulator. This exponential growth just accelerated last year [in 2018], when the FDA endorsed 23 algorithms in medicine.”).

⁸ Asokan Ashok, *The Impact of Artificial Intelligence in Healthcare*, MEDIUM: UNFOLDLABS (Aug. 24, 2017), <https://unfoldlabs.medium.com/the-impact-of-artificial-intelligence-in-health-care-4bc657f129f5> [<https://perma.cc/J4KL-Z628>] (discussing the ability of Virtual Health Assistants to send dementia patients reminders to take medications, provide advice on treatments, and recommend preventive health screenings).

⁹ Jason Chung, *What Should We Do About Artificial Intelligence in Health Care?*, 22 NYSBA HEALTH L. J. 37, 37 (2017).

¹⁰ Bill Siwicki, *New Study Identifies Top 11 Clinical Decision Support Vendors*, HEALTHCARE IT NEWS (Oct. 9, 2018), <https://www.healthcareitnews.com/news/new-study-identifies-top-11-clinical-decision-support-vendors> [<https://perma.cc/98PL-R5S7>].

¹¹ Bangul Khan et al., *Drawbacks of Artificial Intelligence and Their Potential Solutions in the Healthcare Sector*, 1 BIOMED. MATERIALS & DEVICES 731, 732 (2023) (“Because of the advancement of AI, users may mistake artificial systems for people and provide their consent for more covert data collecting, raising serious privacy concerns.”).

¹² *Id.* at 733 (“For instance, under-representation of minorities as a consequence of racial biases in dataset development might lead to subpar prediction results.”).

¹³ *Id.* at 734.

¹⁴ *Id.*

These risks to patient health and safety prompt questions about proper clinical AI implementation. Specifically, there could be ethical concerns about who should be held accountable in the event of patient injury. Patient harm may occur after a physician relies on medical AI recommendations to administer care, but that physician possesses no role in the design of a potentially faulty AI-based system. On the other hand, it may be just as difficult to hold the medical AI developer responsible since they are not involved, at least directly, in patient care. Thus, it is difficult to determine who should be held liable for redressing a patient's loss in the advent of medical AI deployment.

But while it is hard to make this determination, striking the right balance of liability remains of critical importance to all healthcare stakeholders. Patients must possess the ability to be made whole again after incurring harm. Simultaneously, rising healthcare demands in a time of physician shortages¹⁵ elicits the need for greater protection of physicians from liability. Physicians' protection from liability is not only necessary to prevent any undue burdens, but also to facilitate their usage of medical AI so that its benefits to patient health are fully realized. In addition, AI developers cannot be held excessively liable out of a risk of disincentivizing technological innovation in the healthcare space and, subsequently, impeding improvement of the healthcare system in its entirety.

Traditional tort schemes of liability, including medical malpractice and products liability, could be used to assess the liability risk of physicians and AI vendors, but they may be inadequate to balance safe implementation and technological innovation in clinical practice.¹⁶ This is due to the fact, among other reasons, that "the law is built on legal doctrines that are focused on human conduct, which when applied to AI, may not function."¹⁷ Proposals to modify current law, including the standard of care, have been offered in response to this challenge,¹⁸ but no case law has dealt with AI's impact on the standard of care to date.

¹⁵ Kirch & Petelle, *supra* note 5.

¹⁶ George Maliha et al., *Artificial Intelligence and Liability in Medicine: Balancing Safety and Innovation*, 99 THE MILBANK Q. 629, 629 (2021).

¹⁷ Yavar Bathaee, *The Artificial Intelligence Black Box and the Failure of Intent and Causation*, 31 HARV. J. L. & TECH. 889, 890–91 (2018).

¹⁸ Hannah R. Sullivan & Scott J. Schweikart, *Are Current Tort Liability Doctrines Adequate for Addressing Injury Caused by AI?*, 21 AM. MED. ASS'N J. ETHICS 160, 164 (2019).

Despite a lack of judicial guidance, it is of the utmost importance that physicians, as well as their attorneys, understand how medical AI might affect the standard of care in the future. By considering how courts may assign responsibility for patient harm in the advent of medical AI, physicians and healthcare counsel can take proactive measures not only to protect, but enhance, patient health and safety and, in effect, reduce medical malpractice liability. This Note explores the legal and policy implications of different proposed standards of care based on the integration of AI in clinical practice. In Part II, I explain why it is important for physicians to consider AI's potential modifications of the standard of care and provide a brief introduction to this legal concept. Part III evaluates the first proposed standard of care in which physician compliance with AI recommendations is deemed mandatory. Part IV addresses the second proposed standard of care, which requires physicians to consult and meaningfully review AI-based systems. Part V discusses the final standard of care proposal to solely assess the reasonableness of a physician's decision-making, regardless of AI's involvement. In Part VI, I recommend that the standard of care should preserve providers' choice to rely or not rely on AI and their ability to scrutinize AI recommendations, as well as require their review of AI-based systems before clinical employment. I offer mechanisms that could facilitate physicians' review of medical AI tools and shift liability risks onto AI developers. I conclude in Part VII.

II. MEDICAL AI MAY MODIFY THE STANDARD OF CARE

Physicians and legal counsel should understand how AI may change the standard of care in the future to prevent or, at minimum, reduce malpractice liability. The standard of care is “subject to reasonably rapid change when confronted with a breakthrough technology.”¹⁹ Thus, modification of the standard of care as a consequence of rising medical AI application is a matter of “when”, not “if.” However, physicians often feel uncertain as to the appropriate standard of care to follow when new technology is deployed, at least initially.²⁰ During this “implementation chasm,” physicians may commit more errors and, subsequently, increase their risk of medical

¹⁹ A. Michael Froomkin, Ian Kerr, & Joelle Pineau, *When AIs Outperform Doctors: Confronting the Challenges of a Tort-Induced Over-Reliance on Machine Learning*, 61 ARIZ. L. REV. 33, 56 (2019).

²⁰ Michael D. Greenberg, *Medical Malpractice and New Devices: Defining an Elusive Standard of Care*, 19 HEALTH MATRIX 423, 434 (2009).

malpractice.²¹ It has also been posited that healthcare practitioners may be at risk of malpractice liability for failing to employ medical AI if this technology surpasses human capabilities and becomes the standard of care.²² Therefore, to limit exposure to malpractice liability, doctors and healthcare attorneys should consider how the standard of care may change in the advent of AI.

A. What Is the Standard of Care?

While the concept of a standard of care remains complex and ever-changing, it is, at its core, “the benchmark that determines whether professional obligations to patients have been met.”²³ Healthcare providers can be held liable for medical malpractice when a patient suffers harm from substandard care.²⁴ To successfully claim negligence, the injured plaintiff must establish that: (1) the defendant owed the plaintiff a legal duty; (2) the defendant breached this duty; (3) the plaintiff suffered harm or injury; and (4) the defendant’s breach caused the plaintiff’s harm or injury.²⁵ The plaintiff demonstrates the defendant’s breach by showing their patient care did not meet the standard of care.²⁶

The meaning of the standard of care has been developed through the work of state legislatures, administrative agencies, and courts.²⁷ As a result, the legal definition of the standard of care varies from state to state, but most states follow the national standard.²⁸ The national standard of care holds that physicians should provide the same level of care that a reasonably competent physician in similar circumstances would provide.²⁹ Underlying this modern formulation is the judiciary’s gradual minimization of the role of custom since *The T.J. Hooper*

²¹ Sandeep S. Mangalmurti, Lindsey Murtagh, & Michelle M. Mello, *Medical Malpractice Liability in the Age of Electronic Health Records*, 363 NEW ENG. J. MED. 2060, 2061 (2010).

²² Fromkin et al., *supra* note 19, at 50.

²³ Donna Vanderpool, *The Standard of Care*, 18 INNOVATIONS IN CLINICAL NEUROSCIENCE 50, 50 (2021).

²⁴ W. Nicholson Price II, Sara Gerke & I. Glenn Cohen, *Potential Liability for Physicians Using Artificial Intelligence*, 322 J. AM. MED. ASS’N 1765, 1765 (2019).

²⁵ B. Sonny Bal, *An Introduction to Medical Malpractice in the United States*, 467 CLINICAL ORTHOPAEDICS & RELATED RSCH. 339, 339 (2008).

²⁶ Vanderpool, *supra* note 2323.

²⁷ *Id.*

²⁸ *Id.*

²⁹ Fromkin et al., *supra* note 19, at 51.

decision in 1932.³⁰ Over time, courts strayed away from using custom to determine the reasonableness of a physician's conduct, but reassured that medical practice does not have to be perfect.³¹ Rather, healthcare practitioners are simply required to provide minimally competent care.³²

A minority of states follow the locality rule, meaning physicians in these states are evaluated against what other physicians with similar training in the same or a similar community would do.³³ But despite its basis on unfairness concerns arising from variations in training, practice settings, and available resources,³⁴ the locality rule has largely fallen out of favor.³⁵

B. AI's Future Impact on the Standard of Care Is Unclear, but Critical

It is difficult to predict how AI may impact the standard of care and, subsequently, physicians' risk of medical malpractice. Key questions that may provide practitioners insight on their liability risk have yet to be answered. Owing to the fact that AI is a relatively new technology, no case law has yet addressed whether using or failing to use AI itself constitutes negligence or to what extent physicians should defer to AI tools. Additionally, no judicial guidance has been offered on preliminary inquiries of when AI should even be employed in medical practice, under what circumstances, or how often. These questions must be answered to allow physicians to gauge their liability risk as well as provide high-quality patient care to avoid injury.

In the interest of optimizing patient health, judicial clarification of the applicable standard of care is urgently needed. The standard of care's ambiguity with respect to AI jeopardizes the health and safety of

³⁰ The T.J. Hooper, 60 F.2d 737, 737–38, 740 (2d Cir. 1932) (holding a tugboat's owners liable for failing to equip the tugboat with radio receiving sets to prevent barges from sinking during a storm, despite recognition that this practice was not customary at the time).

³¹ Peter Moffett & Gregory Moore, *The Standard of Care: Legal History and Definitions: the Bad and Good News*, 12 W. J. EMERGENCY MED. 109, 110 (2011).

³² Hall v. Hilbun, 466 So. 2d 856, 860–61, 871 (Miss. 1985).

³³ Froomkin et al., *supra* note 19, at 54.

³⁴ *Id.* at 53–54.

³⁵ Stuart P. Swadron, Peter Milano & Anne M. Milano, *A Resource-Based Locality Rule*, 16 AM. MED. ASS'N J. ETHICS 111, 111 (“Most courts now hold, however, that this argument is not valid in an era of seamless electronic communication, national standards in medical training and lifelong education, and the flow of scientific information among medical institutions throughout the country.”).

patients.³⁶ Without a clearly defined standard of care, physicians may order excessive tests and procedures to avoid the risk of liability.³⁷ Simultaneously, if medical malpractice is defined to encompass a broad range of conduct, physicians may limit their services.³⁸ The rise of these defensive medicine practices can also increase health care costs, reduce the quality of care, and devalue the patient-physician relationship.³⁹

While awaiting necessary guidance, several proposals of how AI might impact the standard of care have been proposed in the literature.⁴⁰ Evaluation of each proposal is necessary to proactively equip physicians and healthcare attorneys with possible “best practices” regarding medical AI tools, which can be used not only to protect, but enhance, patient health and safety. Three proposals of medical AI’s modification of the standard of care are assessed below.

III. FIRST PROPOSAL: REQUIRING PHYSICIANS TO ACCEPT AI RECOMMENDATIONS

It is posited that medical AI tools will become the standard of care. Based on a belief in AI’s inevitable outperformance of human physicians⁴¹ and tort law’s recognition of technology’s evolving role in determining reasonableness,⁴² “hospitals and other medical service

³⁶ Gary E. Marchant & Lucille M. Tournas, *AI Health Care Liability: From Research Trials to Court Trials*, J. HEALTH & LIFE SCI. L. 23, 38–39 (2019) (“If the machine is evaluated under a different standard than the human doctor who it replaces in performing a specific task, this discrepancy may bias the outcome of a head-to-head competition between human and machine. Imposing a higher standard on the AI machine may deprive patients of better care and could deprive the health system of potential cost savings provided by an AI system. On the other hand, imposing a lower standard of care on the AI machine may encourage the offering of substandard care.”).

³⁷ CONGRESSIONAL BUDGET OFFICE, LIMITING TORT LIABILITY FOR MEDICAL MALPRACTICE 2 (2004).

³⁸ *Id.* (“[D]octors may engage in defensive medicine, inefficiently restrict their practices, or retire.”).

³⁹ Sonal Sekhar M & Neha Vyas, *Defensive Medicine: A Bane to Healthcare*, 3 ANNALS MED. & HEALTH SCI. RSCH. 295, 295 (2013).

⁴⁰ See Froomkin et al., *supra* note 19, at 35; Iria Giuffrida & Taylor Treece, *Keeping AI Under Observation: Anticipated Impacts on Physicians’ Standard of Care*, 22 TUL. J. TECH. & INTELL. PROP. 111, 113 (2020).

⁴¹ Froomkin et al., *supra* note 19, at 48 (“Regarding AI’s abilities, we assume that at some future date—which may come soon—an ML will be shown to be measurably superior to humans in some specialized aspect of diagnostic medicine. We make this assumption because current trends point strongly in that direction given ML’s advances in tumor-detection as well as other areas.”).

⁴² *Id.* at 51.

providers will carry out AI-recommended treatment plans unless there is a very clear reason to do otherwise.”⁴³ Although performance may be best when AI and human capabilities are combined,⁴⁴ “the observations and recommendations of AI could depose the professional judgments of rigorously trained health care practitioners”⁴⁵ if AI alone becomes as good, or even better, at providing services.⁴⁶

A. Mandating Compliance with Medical AI May Shift the Burden of Proof on Physicians but Reduce Their Risk of Malpractice Liability Overall

Patient litigants who bring medical malpractice claims may benefit from a standard of care that requires physicians to comply with AI recommendations. Their burdens to prove the standard of care and breach of the physician’s duty would arguably be reduced.⁴⁷ The defendant physician would likely shoulder the burden of explaining why they failed to follow AI recommendations,⁴⁸ which may be restricted to limited circumstances. However, physicians might be able to overcome this presumption of negligence by demonstrating their deviation was necessary and appropriate under the circumstances.⁴⁹

Raising the standard of care to mandate compliance with AI may alleviate physicians’ uncertainty about their liability risk. Currently, providers may struggle to understand what quality and quantity of care they must provide to avoid malpractice liability. The standard of care varies state to state and is determined by a long precedent of various court holdings.⁵⁰ But a standard of care that simply requires physicians to follow AI recommendations may offer some much-needed clarity and “be more reliable than decisions made by a jury’s assessment of competing hired expert witnesses.”⁵¹ A higher standard of care that raises the quality of patient care might alleviate physicians’ uncertainty

⁴³ *Id.*

⁴⁴ *Id.* at 49 (“[N]eural networks can make confident but erroneous identifications that no human would make. Keeping a human around protects against those obvious errors and might protect against other kinds of errors as well.”).

⁴⁵ Mousa Alshanteer, *A Current Regime of Uncertainty: Improving Assessments of Liability for Damages Caused by Artificial Intelligence*, 21 N.C. J. L. & TECH. 27, 38 (2020).

⁴⁶ Froomkin et al., *supra* note 19, at 49–50.

⁴⁷ Amanda Swanson & Fazal Khan, *The Legal Challenge of Incorporating Artificial Intelligence into Medical Practice*, 6 J. HEALTH & LIFE SCI. L. 90, 121 (2012).

⁴⁸ *Id.*

⁴⁹ *Id.* at 122.

⁵⁰ Vanderpool, *supra* note 23, at 50.

⁵¹ *Id.*

about their malpractice risk. Since AI suggestions represent the output of “the analysis and review of the best available clinical data . . . ,”⁵² greater reliance on medical AI could arguably result in better patient outcomes, which reduces the likelihood of patients bringing negligence claims.

A standard of care that requires physicians to accept AI recommendations may reduce their liability risk overall. In a recent study, potential jurors reported that a physician’s deviation from the standard of care, despite its basis on an erroneous AI recommendation, was still reasonable even if the patient became injured.⁵³ Further, potential jurors felt it was more reasonable to follow AI’s recommendations than the pre-existing standard of care, suggesting that compliance with AI may protect healthcare practitioners from incurring liability.⁵⁴ Doctors’ liability risk may also be reduced if they can cite their reliance on AI recommendations as an affirmative defense,⁵⁵ especially when AI systems have existed long enough to be appropriately peer-reviewed and assessed for reliability and accuracy.⁵⁶ A reduced malpractice liability risk would quell physicians’ skepticism of medical AI and incentivize greater usage⁵⁷ that could enhance patient safety and quality of care.

B. AI’s Incorporation Into the Standard of Care May Hurt Patients’ Chances of Recovery in Court, Heighten Physicians’ Risk of Overreliance and Liability, and Reduce the Quality of Patient Care

Demanding physicians to rely on medical AI recommendations may also present notable challenges for patients. The adoption of inscrutable AI in medical practice could complicate injured patients’

⁵² *Id.*

⁵³ W. Nicholson Price II, Sara Gerke & I. Glenn Cohen, *How Much Can Potential Jurors Tell Us About Liability for Medical Artificial Intelligence?*, 62 J. NUCLEAR MED. 15, 15 (2021).

⁵⁴ *Id.*

⁵⁵ Swanson & Khan, *supra* note 47, at 122–23.

⁵⁶ Elliot Moormann, *When AI Becomes the Standard*, JD SUPRA (Oct. 3, 2023), <https://www.jdsupra.com/legalnews/when-ai-becomes-the-standard-2013462/> [<https://perma.cc/A2JF-8X9G>].

⁵⁷ Price II, Gerke & Cohen, *supra* note 53, at 15 (“Liability is likely to influence the behavior of physicians who decide whether to follow AI advice, hospitals that implement AI tools for physician use, and developers who create those tools in the first place. If physicians are shielded from liability (typically medical malpractice liability) when they use AI tools, even if patient injury results, they are more likely to rely on these tools, even if the AI recommendations are counterintuitive.”).

ability to recover from medical malpractice claims. Defendants are only held liable for harm that could have been reasonably foreseen and prevented.⁵⁸ But unlike other health-related technologies, AI is “designed to interfere with human decision-making; it replaces or augments human decision processes with inscrutable, unintuitive, statistically derived, and often secret code.”⁵⁹ Consequently, a defendant may not be held liable for failing to prevent a patient plaintiff’s injuries if certain AI errors are considered unforeseeable. Patient plaintiffs may also have difficulty recovering damages if it becomes harder to prove causation. A physician’s involvement and AI’s decision-making may become sufficiently intertwined to the extent that a jury may not properly discern the true source of the patient’s injury.⁶⁰

If physicians are stripped of their autonomy to deviate from AI suggestions, patients might not receive optimal, personalized patient care. AI technologies are predisposed to bias, which results in the provision of biased patient care.⁶¹ This poses significant risks to patient health, including misdiagnosis.⁶² Thus, it is contended that AI suggestions should not totally displace providers’ professional judgments, since health care practitioners can mitigate AI’s inherent biases.⁶³ Despite the fact that certain algorithms have been touted for their ability to account for each patient’s “uniqueness”, these algorithms

⁵⁸ Andrew D. Selbst, *Negligence and AI’s Human Users*, 100 B.U. L. REV. 1315, 1332 (2020).

⁵⁹ *Id.* at 1321.

⁶⁰ Frank Griffin, *Artificial Intelligence and Liability in Health Care*, 31 HEALTH MATRIX 65, 101 (2021).

⁶¹ Ana Bracic, Shawneequa L. Callier, & W. Nicholson Price II, *Exclusion Cycles: Reinforcing Disparities in Medicine*, 377 SCI. 1158, 1158–59 (2002) (“AI systems themselves cannot have negative views of minoritized groups. But the humans who write, validate, and deploy AI may be racist or biased, especially given coders’ lack of diversity, leading to systems that incorporate antiminority culture When minoritized patients are included in underlying datasets, AI systems are likely to reflect bias in their recommendations. For instance, an AI system used to recommend follow-up coordination for patients at high risk of medical complications reflected precisely this bias: Because it was trained on underlying medical practice that provided less care to Black patients, the algorithm predicted lower risk for Black patients than similarly situated white patients—and consequently was less likely to recommend interventions.”).

⁶² Alshanteer, *supra* note 45, at 39–40 (referencing a virtual consultation platform called Doctor Hazel that reported an 85% success rate of detecting potentially cancerous moles to demonstrate the platform’s substantial potential for reporting false negatives).

⁶³ *Id.* at 40.

are not always employed.⁶⁴ As a result, each patient's distinct health conditions or symptoms may not be adequately addressed when other patients' unique data is relied on.⁶⁵ This suggests that AI "could not be assured to be in the best interests of every unique patient . . . ,"⁶⁶ which minimizes the delivery of optimal health care.

Strict adherence to AI recommendations may also jeopardize the patient-physician relationship. The American Medical Association's Code of Ethics states that

The relationship between a patient and a physician is based on trust, which gives rise to physicians' ethical responsibility to place patients' welfare above the physician's own self-interest or obligations to others, to use sound medical judgment on patients' behalf, and to advocate for their patients' welfare.⁶⁷

It is expected that AI will substantially benefit healthcare, but total reliance on AI recommendations for the provision of patient care may not constitute sound medical judgment. AI tools can process much larger sets of patient data to optimize diagnosis or treatment selection, but these systems lack the ability to make nuanced medical decisions.⁶⁸ During patient encounters, providers could rely on patients to share their health concerns and prompt for more context. Physicians understand that various pieces of patient data should be weighed differently in the process of formulating an appropriate remedy. AI systems, on the other hand, do not possess the ability to converse with patients. Additionally, the scope of AI patient care recommendations is limited because the data that is input to generate the suggestions is limited itself.⁶⁹

⁶⁴ Swanson & Khan, *supra* note 47, at 122.

⁶⁵ *Id.*

⁶⁶ *Id.* at 123.

⁶⁷ AM. MED. ASS'N, OPINION 1.1.1 PATIENT-PHYSICIAN RELATIONSHIPS (2022).

⁶⁸ Joe McKendrick & Andy Thurai, *AI Isn't Ready to Make Unsupervised Decisions*, HARV. BUS. REV. (Sept. 15, 2022), <https://hbr.org/2022/09/ai-isnt-ready-to-make-unsupervised-decisions> [<https://perma.cc/589Z-B5HY>] ("However, AI notoriously fails in capturing or responding to intangible human factors that go into real-life decision-making—the ethical, moral, and other human considerations that guide the course of business, life, and society at large.").

⁶⁹ Froomkin et al., *supra* note 19, at 72 ("ML works by using as inputs what is, in effect, big data of medicine: symptoms, test results, diagnoses, and outcomes from a substantial number of patients. In the case of ML and radiology, the "outcomes" are the opinions of a panel of physicians who, for example, score images as being of tumors or not tumors. In other cases, and perhaps for future iterations of ML too, the inputs might be based on real-life outcomes. In still other cases, the inputs could be

Therefore, an AI system may be ill-equipped to render the appropriate remedy for a patient since it lacks the necessary context for effective medical decision-making, which could lead to patient harm. Because physicians have a duty to ensure their patients receive the best quality of care possible,⁷⁰ physicians should not substitute inadequate AI recommendations for their own expertise.

To reduce liability exposure, physicians should retain the ability to override AI recommendations as they medically see fit. While using electronic health records, for example, physicians often override clinical-decision support protocols out of medical necessity.⁷¹ One instance may arise when a patient with myocardial infarction can only take clopidogrel and aspirin for treatment after their physician overrides a safety protocol programmed in a clinical-decision support system that protects against excessive anticoagulation.⁷² If the patient is injured in this situation, and the standard of care, hypothetically, has been raised to require adherence to medical AI recommendations, a jury could construe that physician's decision to overrule the clinical-decision support system unfavorably (despite the fact that use of both drugs is clinically appropriate).⁷³ This predicament may similarly apply in instances where a provider sets an AI system's recommendations aside under clinically appropriate circumstances. This hypothetical example suggests that a raised standard of care might punish healthcare practitioners who fail to follow an AI suggestion, despite evidence that deviation is medically sound or even superior, with inappropriate liability.⁷⁴ In turn, greater exposure to liability might lower the quality of patient care, as it could deter physicians from disclosing their decisions or errors.⁷⁵

Raising the standard of care to mandate compliance with AI also fails to reflect contemporary patient expectations for their healthcare.

"synthetic" training data created to train the system, if only as a way of initiating the system before graduating to what could be a smaller quantity of genuine patient data. In each of these cases, the training process is path dependent, and the quality of answers depends on how the system is trained. Inevitably, the quality of an AI's outputs is subject to the quality of the data—GIGO (garbage in, garbage out) remains as true as ever").

⁷⁰ Swanson & Khan, *supra* note 47, at 122.

⁷¹ Mangalmurti et al., *supra* note 21, at 2064.

⁷² *Id.*

⁷³ *Id.*

⁷⁴ *Id.*

⁷⁵ David M. Studdert & Michelle M. Mello, *In From the Cold? Law's Evolving Role in Patient Safety*, 68 DEPAUL L. REV. 421, 422–23 (2019).

Although 51% of Americans believe AI's employment in disease diagnosis and treatment formulation would ameliorate bias in patient care, 60% would feel uncomfortable if their physician relied on AI for their own medical needs.⁷⁶ Further, the majority of Americans are not certain that the application of medical AI would create better health outcomes.⁷⁷ One major concern includes healthcare practitioners' fervor to utilize AI in medical practice may outpace their knowledge of the comprehensive risks associated with the technology.⁷⁸ Americans' skepticism towards medical AI indicates that patients prefer their physicians' active involvement in their care over deference to medical technology.

AI's possible incorporation into the standard of care also raises concerns about healthcare practitioners' overreliance on and displacement by AI. Technological developments have long been feared to displace human workers.⁷⁹ But aside from the trepidation about the medical workforce's total displacement, it is contended that new technology causes physicians to lose their skills.⁸⁰ As an emerging medical technology, AI may contribute to this loss among new physicians. Newly minted doctors who grow accustomed to relying on AI tools for diagnosis and treatment may underdevelop critical thinking skills that become critical in circumstances where AI is unavailable. It is difficult to predict how the medical training of incoming healthcare practitioners will be implicated by the rise of AI and whether that impact will detriment the quality of future patient care.

⁷⁶ Alec Tyson, Giancarlo Pasquini, Alison Spenser & Cary Funk, *60% of Americans Would Be Uncomfortable With Provider Relying on AI in Their Own Health Care* (Feb. 22, 2023), PEW RSCH. CTR., <https://www.pewresearch.org/science/2023/02/22/60-of-americans-would-be-uncomfortable-with-provider-relying-on-ai-in-their-own-health-care/> [<https://perma.cc/GJG8-P3YT>].

⁷⁷ *Id.* at 4 (“[O]nly 38% say AI being used to do things like diagnose disease and recommend treatments would lead to better health outcomes for patients generally, while 33% say it would lead to worse outcomes and 27% say it wouldn’t make much difference.”).

⁷⁸ *Id.* at 6.

⁷⁹ Stanley Aronowitz & William DiFazio, *High Technology and Work Tomorrow*, 544 ANNALS AM. ACAD. POL. & SOC. SCI. 52, 53 (1996).

⁸⁰ See Robert Lehr Goodman, *Commentary: Health Care Technology and Medical Education: Putting Physical Diagnosis in Its Proper Place*, 85 ACAD. MED. 945, 945–46 (2010).

C. It Is Unlikely the Standard of Care Will Be Raised to Require Physicians' Acceptance of Medical AI Recommendations

Modification of the standard of care to require physicians' adherence to medical AI recommendations is possible, but unlikely. Change to the standard of care is gradual, so physicians will not be expected to follow AI recommendations any time soon. But more importantly, AI is not advanced enough to make unsupervised decisions.⁸¹ Even if it was, adequate medical decision-making is not limited to statistical analyses. Patient care is founded on empathy and trust that can only be borne within the patient-physician relationship. While AI's ability to produce large amounts of data may easily surpass that of human physicians', these technologies are fundamentally limited by their inability to account for ethical, moral, and empathetic considerations in their interpretations of that data.⁸² Physicians' roles as AI operators must be preserved to ensure the technology is employed safely within the health care system. Therefore, it is critical that physicians are kept in the loop with medical AI, not replaced by it.

IV. SECOND PROPOSAL: REQUIRING PHYSICIANS TO CONSULT AND MEANINGFULLY REVIEW MEDICAL AI RECOMMENDATIONS

Raising the standard of care to require acceptance of AI recommendations may be improper for several social, legal, and ethical reasons, but it may be just as improper not to use medical AI in some capacity, especially as its validity and reliability improve. However, physicians may run the risk of becoming over reliant on AI to the detriment of patient health and well-being,⁸³ since tort law would

⁸¹ McKendrick & Thurai, *supra* note 68.

⁸² *Id.*

⁸³ Froomkin et al., *supra* note 19, at 37 (“[A] diagnostic monoculture that leads to less input from human physicians could make quality control of diagnostic databases much more difficult. The problem becomes far more serious once reliance on ML goes beyond diagnosis to treatment. The reduction in new data from physicians--that is to say the creation of a loop in which outcomes added to the database are solely or overwhelmingly the result of ML-informed treatment decisions--creates scenarios in which we cannot rule out the risk that sub-optimal conclusions are reached. If a set of symptoms is consistently producing an erroneous ML diagnostic, and physicians act on that erroneous diagnostic, where will ML get the data to suggest a different diagnosis which leads to better treatment? If the answer is “nowhere” then we have a problem.”).

incentivize greater reliance on “superior” AI.⁸⁴ To protect against this risk, Froomkin et al. suggest the creation of a “ML Exception” to the standard of care.⁸⁵ Construed narrowly, this exception would require physicians to consult an AI system, but not hold them liable for following or deviating from its recommendations unless it was “indefensible” to do so.⁸⁶ Relatedly, Froomkin et al. also propose a standard of care that gets “frozen” to require meaningful human review or participation, even if AI proves to outperform physicians in the future.⁸⁷

A. Required Consultation and Review of AI Reduces Fears of Liability Among Physicians, Enhances Balanced Decision-Making, and Strengthens the Patient-Physician Relationship

Under an exception that requires AI consultation but only finds liability under limited circumstances, physicians may be less fearful of incurring excessive liability for employing AI in their clinical practice. If the push to incorporate AI into the standard of care strengthens in the future, providers who forego employing or following AI recommendations may be exposed to greater liability.⁸⁸ But at a minimum, this narrow “ML Exception” acts as a “safe harbor” for physicians who deviate from AI recommendations.⁸⁹ Pending their acceptance or rejection of AI recommendations is justified, physicians would not be exposed to a heightened malpractice risk. Furthermore, this proposed exception would align with current law, under which physicians are already held responsible for erroneously following an AI system’s recommendations.⁹⁰ A “ML Exception” to the standard of care

⁸⁴ *Id.* at 36 (“[O]nce a machine is demonstrably superior to human diagnosticians, malpractice law will require the use of the superior technology in certain sectors of medical diagnostics. Medical service providers who do not use ML systems will be said to fall below the appropriate standard of care in cases where things go wrong, and hospitals that use human physicians rather than ML systems will be subject to claims in negligence--as will the treating physicians themselves.”).

⁸⁵ *Id.* at 95.

⁸⁶ *Id.*

⁸⁷ *Id.* at 97.

⁸⁸ *Id.* at 95. (“[E]ven human doctors who believe with some justice that their diagnoses are better than the computer’s will face moral risks and obstacles in displacing the AI’s suggestion.”).

⁸⁹ *Id.*

⁹⁰ *Id.* (“Under current law, an ML system, being a machine, has no identity nor agency for legal purposes, and hence its decisions will in all cases be ascribed to the human(s) or corporation(s) responsible for acting on its diagnoses.”).

would stabilize physicians' medical malpractice risk and, consequently, incentivize greater AI usage that enhances patient health outcomes.

Allowing doctors to second-guess AI recommendations and contribute their "experience-based review"⁹¹ can improve the quality of patient services. If health care practitioners can assess an AI intervention's levels of risk and confidence and underlying evidentiary support,⁹² they can take advantage of the efficiency medical AI offers and, simultaneously, confirm its safety and reliability to provide optimal patient care. This balancing act may arise, for example, when a physician must determine the appropriate course of action for an identified risk of lung cancer by weighing an AI tool's lack of validation against its relatively low-risk recommendation to conduct further tests.⁹³ The medical expertise that doctors can contribute during AI evaluations provides additional layers of verification and necessary context that positively steer algorithmic accuracy.⁹⁴ The capacity of algorithmic training sets to offer individualized, high-quality medical recommendations appears rudimentary in comparison to that of a practicing physician with medical expertise that has been refined by years of unique patient encounters. Further, a framework that calls for doctors' input requires providers to draw on their prior training while employing a new technological system. This scheme not only guards against technical skill loss but also expands the array of options available to physicians to treat patients. Therefore, joint AI-human physician decision-making highly benefits patient health.

A meaningful review standard of care may also better align with physician attitudes toward medical AI. Although a research study revealed a "consensus [among physicians and medical students] that AI should become a partner of physicians rather than a competitor . . .," physicians still felt certain tasks, like diagnostic decision-making, should largely remain in the hands of human clinicians or, at most, shared equally with AI.⁹⁵ This reservation was further supported by the fact that physicians did not feel comfortable following AI

⁹¹ W. Nicholson Price II, *Big Data and Black-Box Medical Algorithms*, 10 SCI. TRANSLATIONAL MED. 1, 5 (2019).

⁹² *Id.*

⁹³ *Id.*

⁹⁴ *Id.* ("Providers can also help balance an algorithm's goal of average, overall accuracy with the realities of individual patient experiences and the possibilities of rare diseases outside algorithmic training sets.")

⁹⁵ Mingyang Chen et al., *Acceptance of clinical artificial intelligence among physicians and medical students: A systematic review with cross-sectional survey*, 9 FRONTIERS IN MED. 1, 10 (2022).

recommendations without verifying them first.⁹⁶ If the standard of care required physicians to review AI suggestions, providers could maintain the active clinical decision-making role they desire, as well as better understand how these programs operate. In turn, reduced skepticism towards AI would lead to more usage among physicians and better health outcomes among patients.

Mandatory AI consultation can enhance patient-physician relationships by streamlining healthcare delivery. Over time, medical AI interventions will be increasingly employed in clinical care as they gain validation. Minimally, routine AI use can offload some of a provider's daily tasks and allow more facetime between physicians and their patients during encounters. Greater face-to-face interactions allow doctors and patients to build rapport and trust and boosts patient satisfaction.⁹⁷

B. Undeveloped Evaluation Tools, Time Constraints in Clinical Settings, and Health Disparities Challenge AI Consultation and Meaningful Review Requirements

Although a meaningful review of AI can optimize patient health and well-being, it may not be practical in current clinical settings. The standard of care may inevitably require physicians to exercise due diligence for any AI tool they use, including understanding how it was developed, the risks it poses, and its applicability to the patient population at hand.⁹⁸ But the kind of physician review that will be sufficiently “meaningful” remains unclear.⁹⁹ Appropriate evaluation tools also have yet to be developed.¹⁰⁰ Further, the inherent design of certain AI tools prevent physicians from conducting any meaningful review. Black-box algorithms, for instance, are aptly named because the mechanisms underlying their suggestions are opaque.¹⁰¹ Consequently,

⁹⁶ *Id.*

⁹⁷ Joseph S. Alpert, *Face-to-Face Versus Digital Encounters in the Clinic*, AM. J. MED. 1, 1 (2023).

⁹⁸ Scott J. Schweikart, *Who Will Be Liable for Medical Malpractice in the Future? How the Use of Artificial Intelligence in Medicine Will Shape Medical Tort Law*, 22 MINN. J.L. SCI. & TECH. 1, 21–22 (2021).

⁹⁹ Froomkin et al., *supra* note 19, at 97.

¹⁰⁰ Price II, Gerke, & Cohen, *supra* note 24, at 1766.

¹⁰¹ W. Nicholson Price II, *Medical Malpractice and Black-Box Medicine*, in BIG DATA, HEALTH LAW, AND BIOETHICS 295, 300–01 (2018) (“Because neither providers nor developers know the relationships underlying the recommendations of black-box medicine, the physician cannot stand as merely the final step in a sequence of care. Once he or she has decided to use a particular black-box

providers cannot properly scrutinize the algorithms' recommendations before accepting or rejecting them.

Meaningful review of AI-based recommendations may be difficult to accommodate in a hectic hospital environment. Just as doctors struggle to meaningfully examine EHRs in tightly timed patient encounters without missing key information,¹⁰² physicians may not be able to adequately review AI recommendations. The burden of medical AI assessments, in addition to other work, can contribute to physician burnout. Currently, rising administrative, technological, and regulatory obligations cause nearly 63% of providers to feel emotionally exhausted, apathetic, and overworked.¹⁰³ Burnout reduces physicians' morale and productivity and, consequently, jeopardizes patient care delivery.¹⁰⁴ If healthcare practitioners are required to review AI tools but lack the necessary capacity to do so, the burden of AI systems may outweigh their benefits so as to significantly reduce adoption.

Health disparities may also be widened by a standard of care that requires consultation and meaningful review of medical AI, despite its proffered accessibility¹⁰⁵ and promise to "democratize" medical expertise.¹⁰⁶ Medical AI is usually developed and trained in better-resourced medical settings with high-quality data collection systems and experienced clinicians.¹⁰⁷ Because its functionality is limited to the data it is trained on, medical AI may not be able to take certain factors unique to low-resource contexts into proper consideration when it is

algorithm—itself a complex choice—he or she cannot understand and thus verify the algorithm's recommendation against his or her body of substantive expertise; the physician can only accept what the algorithm recommends or not.”).

¹⁰² Mangalmurti et al., *supra* note 21, at 2065.

¹⁰³ *What is physician burnout?*, AM. MED. ASS'N (Feb. 16, 2023), <https://www.ama-assn.org/practice-management/physician-health/what-physician-burnout> [<https://perma.cc/ME2M-YG54>].

¹⁰⁴ *Id.*

¹⁰⁵ Giuffrida & Treece, *supra* note 40, at 117–18 (“In the case of AI tools, scholars suggest that the nature of Medical AI—which can be accessed remotely or through the cloud as a decentralized service, rather than physical equipment stored in and maintained by the hospital—reduces the viability of arguments that it is infeasible to obtain Medical AI, so long as these services are not prohibitively costly.”).

¹⁰⁶ W. Nicholson Price II, *Medical AI and Contextual Bias*, 33 HARV. J.L. & TECH. 66, 73 (2019) (“Today, there are tremendous differences in the quality and level of care patients receive based on the context in which they receive that care Medical AI promises to reduce this variation by “leveling up”—allowing a much broader swath of providers to provide care at the level of excellent specialists”).

¹⁰⁷ *Id.* at 66–67.

employed in these areas.¹⁰⁸ Consequently, these AI systems may deliver lower quality interventions in under-resourced settings and, therefore, inhibit true democratization of better care.

Furthermore, if the standard of care requires the adoption of expensive AI interventions, healthcare may become unaffordable. To comply with the standard of care, hospitals will be forced to externalize the costs of AI systems by raising service fees for patients. In turn, patients with low socioeconomic status will struggle to access adequate medical care and, subsequently, be at risk of experiencing disproportionately poor health outcomes.

C. Allowing Providers to Second-Guess AI Recommendations May Improve Patient Health Outcomes, but Issues Remain When AI Consultation Is Required, and the Definition and Practicality of “Meaningful” Review Are Unclear

A standard of care that preserves physicians’ roles as AI operators successfully curtails several legal and ethical issues advanced by the first standard of care proposal that requires physicians’ adherence to AI suggestions. However, it does not fully resolve other challenges, including the ambiguity of “meaningful” review, its impracticality in daily clinical practice, and widening healthcare disparities that poorer patients might face when AI consultation is required.

V. THIRD PROPOSAL: REQUIRING PHYSICIANS TO EXERCISE REASONABLE PRUDENCE WITH OR WITHOUT MEDICAL AI

In the advent of AI, courts might not raise the standard of care to require its use at all. Instead, courts may determine a physician’s negligence based on the reasonableness of their decision-making, regardless of AI’s involvement.¹⁰⁹ The reasonableness of a provider’s decision to rely on or forego AI may also be considered.¹¹⁰ If a provider uses an AI tool under this standard of care, courts would likely account for “how the physician used the AI tool, whether it was reasonable to use the AI under the circumstances, and whether the medical advice

¹⁰⁸ *Id.* at 67 (“Democratizing medical expertise, though, requires deploying that medical AI in low-resource settings like community hospitals, community health centers, practitioners’ offices, or rural health centers in less-developed countries. This translation runs into a problem: low-resource contexts have different patient populations and different resources available for treatment than high-resource contexts, and disparities in available data make it hard for AI to account for those differences.”).

¹⁰⁹ Giuffrida & Treece, *supra* note 40, at 114–15.

¹¹⁰ *Id.*

rendered conforms to that which a reasonably prudent physician would provide.”¹¹¹

Evaluating the reasonableness of a healthcare practitioner’s conduct, no matter what tools they employ, conforms with the purpose of the medical malpractice doctrine, which is “not to create broad disincentives to innovation, but rather to ensure that providers use appropriate care and skill in delivering medical services, regardless of treatment modality.”¹¹² Under this standard, a physician’s decision to use or not to use AI would be scrutinized like a decision to use or not to use any other diagnostic or treatment tool at their disposal. Thus, physicians would retain their autonomy in deciding whether an AI intervention is even appropriate for their patient. Preservation of this choice would alleviate a doctor’s burden of adopting the technology and its regulations in an already hectic work environment, as well as their concerns about providing substandard care that may lead to patient harm.

As long as providers employ new technology responsibly by scrutinizing its risks and benefits on a case-by-case basis, it is contended that malpractice should remain indifferent to its incorporation in healthcare.¹¹³ Adoption of a reasonableness standard would incentivize physicians to evaluate AI systems prior to employment and to adopt these tools at a higher rate. Healthcare practitioners would assess AI tools to ensure they provide minimally competent care to patients that avoids the risk of injury and malpractice liability. Furthermore, a lower liability risk encourages greater adoption of AI-based algorithms among physicians. Greater medical AI adoption would spur further innovation within the healthcare industry that amply benefits all stakeholders. Therefore, an appropriate balance between the facilitation of beneficial technological innovation, high-quality patient care and physician autonomy, as well as minimization of patient harm could be struck under a reasonableness standard.

¹¹¹ *Id.* at 116.

¹¹² Michael D. Greenberg, *Medical Malpractice & New Devices: Defining an Elusive Standard of Care*, 19 HEALTH MATRIX 423, 441 (2009).

¹¹³ *Id.* at 443. (“Put another way, we ideally want to protect people against negligence or recklessness committed by their physicians, but in so doing, we do not want to create broad disincentives to new technology in itself, simply because it is new and not yet widely in use. We do want physicians to consider the risks and benefits of new technology before they decide to adopt it. But we do not want the law to create a diffuse cloud of malpractice liability, such that providers have no certainty about how the legal system might judge them after the fact.”).

Physicians employed in lower-resourced healthcare settings would also benefit from a lower liability risk pursuant to a standard of care that does not mandate AI adoption. If the standard of care focuses on the reasonableness of medical decision-making, providers in under-resourced clinical settings could rely on already-existing tools for the provision of care without breaching their duty to provide minimally competent care to patients. Additionally, under-resourced care facilities would not be forced to externalize the costs of procuring expensive AI systems onto patients, so patients with low socioeconomic status would not be at risk of losing access to their healthcare. Until the cost of AI technology declines and accessibility subsequently expands, a standard of care akin to the national standard may be necessary to prevent further health disparities.

VI. RECOMMENDATIONS

The standard of care should leave a physician's discretion to employ or not to employ AI and to second-guess its interventions unfettered in order to balance the promotion of healthcare innovation and mitigation of medical AI's risks to patients. By allowing physicians to exercise their medical expertise (rather than constrain them to the orders of an AI-based system) in providing personalized patient care, they may limit patients' exposure to harm and, subsequently, reduce the risk of malpractice liability. Furthermore, the standard of care should not be raised to require AI use based on issues of fairness. It would be unfair to demand physicians to rely on AI suggestions but hold them liable in the event of patient injury when mechanisms to review AI recommendations have yet to be established. More importantly, forcing lower-resourced clinical settings to externalize prohibitive costs of AI onto patients who may lose access to their healthcare as a result is unjust. Thus, to encourage the employment of medical AI and reduce patient exposure to harm, physicians should be held against a standard of care that preserves their choice to use or forego AI and second-guess its recommendations.

Providers who decide to utilize AI-based systems should use these tools as confirmatory, not substitutive, devices. Until the standard of care is clarified, and AI is publicly validated for safe use, providers should adhere to the existing standard of care even if an AI recommendation suggests deviation. Although providers may not fully realize all the benefits AI offers by solely following those recommendations they would have suggested themselves, they can still benefit from AI's quicker and cheaper analysis that allows them to

streamline tasks.¹¹⁴ And despite the fact that reliance on non-standard AI recommendations is posited to protect providers from liability in the event of patient injury,¹¹⁵ this conduct may over-insulate practitioners from accountability and encourage substandard care. Since providers are not typically held liable for patient injury when the standard of care is followed under current medical malpractice law,¹¹⁶ it remains in their best interest to continue following the standard of care while using AI.

When physicians use AI-based systems as confirmatory tools, the standard of care should require reasonable scrutiny of these systems. Clinicians should not be able to cite their reliance on AI as an affirmative defense any time patient injury occurs, as this would allow them to escape accountability by blaming their instruments. Rather, clinicians should exercise due care in evaluating the AI tools they decide to use and be held liable for negligence if their assessments fall short of being reasonable. However, guidelines need to be created to delineate what reasonable AI-based system scrutiny encompasses. Currently, the realities of clinical practice, inscrutable black-box AI design, and lack of established training curricula render thorough AI assessments nearly impossible. The practical challenges that AI review poses to physicians may, in turn, raise risks of patient harm or disincentivize AI use altogether. To ensure AI is used safely without harming patient health and raising malpractice liability, strategies to facilitate practitioners' scrutiny of AI tools must be developed.

Systemic approaches to aiding physician review of medical AI tools may start with AI vendors. One approach could include imposing a burden of proof to demonstrate a “presumption of unlawfulness”¹¹⁷ on AI developers to alleviate doctors' fears of relying on error-prone and biased medical AI. Medical AI-based systems could undergo extensive testing in clinical settings to gain approval prior to sale, similar to how pharmaceutical drugs must pass rigorous clinical trials before being

¹¹⁴ W. Nicholson Price II, *Artificial Intelligence in Health Care: Applications and Legal Implications*, 14 THE SCITECH L. 10, 12 (2017).

¹¹⁵ Price II et al., *supra* note 53, at 15.

¹¹⁶ W. Nicholson Price, Sarah Gerke, & I. Glenn Cohen, *Liability for Use of Artificial Intelligence in Medicine 5* (Univ. Mich. L. & Econ. Rsch., Working Paper No. 22–020, 2022).

¹¹⁷ See Gianclaudio Malgieri & Frank Pasquale, *From Transparency to Justification: Toward Ex Ante Accountability for AI* (Brooklyn L. Sch., Working Paper No. 712, 2022) (“In other terms, we propose a presumption of unlawfulness for high-risk models, while the AI developers should have the burden of proof to justify why the AI is not illegitimate (and thus not unfair, not discriminatory, and not inaccurate).”).

marketed. Alternatively, legislation that requires AI developers to build interpretable and transparent AI systems could be promoted.¹¹⁸ These approaches not only facilitate physicians' evaluation of these systems before their adoption in clinical practice, but also provide healthcare institutions more bargaining power to demand higher quality AI tools from developers. Safely relying on high-quality AI-based systems in the healthcare industry is critical when patients' lives are at stake.

VII. CONCLUSION

As medical AI gains validation in clinical practice, it is possible that the standard of care will be raised to require its use. But the standard of care's incorporation of AI would likely develop over a long period of time and depend on the practice area and type of medical application.¹¹⁹ "Ultimate determination [of whether following AI recommendations becomes part of the standard of care] will likely remain a conclusion of what competent physicians actually do, reached by courts after arguments by expert witnesses."¹²⁰ Until courts make these determinations, it is important for physicians to rely on emerging AI tools, if they decide to do so, with caution. The swift introduction of these tools in the healthcare space has reasonably sparked concerns over a plethora of patient care-related issues, including data privacy, bias and inequality, and potentially error-prone diagnosis and treatment, that could augment physicians' malpractice risk. The fact that no case has yet addressed how medical AI may modify the standard of care underscores the need for physicians to employ AI judiciously until their liability risk is clarified.

But, in light of the numerous ways AI has already optimized patient care, these risks should not totally prevent physicians from incorporating medical AI into their future practice. Undoubtedly, medical AI will pose some risk of patient harm, especially while it is still new and has yet to be validated. But "the promise of AI is to reduce—not eradicate—errors."¹²¹ The evaluation of emerging medical AI against a standard of perfection, rather than the problematic status quo of our current healthcare system, may indirectly discourage

¹¹⁸ Selbst, *supra* note 58, at 1363.

¹¹⁹ Price et al., *supra* note 116, at 5.

¹²⁰ *Id.* at 6.

¹²¹ Selbst, *supra* note 58, at 1331.

beneficial AI employment in clinical practice.¹²² Unfounded hesitancy towards AI adoption will inhibit necessary improvement of these tools and disincentivize further medical innovation to improve patient health outcomes.

¹²² W. Nicholson Price II, *Risks and Remedies for Artificial Intelligence in Health Care*, BROOKINGS (Nov. 14, 2019), <https://www.brookings.edu/articles/risks-and-remedies-for-artificial-intelligence-in-health-care/> [<https://perma.cc/RVL4-Q4LT>] (“AI has the potential for tremendous good in health care. The nirvana fallacy posits that problems arise when policymakers and others compare a new option to perfection, rather than the status quo. Health-care AI faces risks and challenges. But the current system is also rife with problems. Doing nothing because AI is imperfect creates the risk of perpetuating a problematic status quo.”).