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Research Paper

Artificial Intelligence in Healthcare: A Critical Review of Ethical, Social, and Clinical Implications

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Abstract

Artificial intelligence, or AI, is really changing how healthcare works. It helps with things like better diagnoses, helping doctors decide what to do, and making predictions about health. This article takes a good look at the ethical, social, and how things change in clinics when AI is used in healthcare. The article uses information that's already out there, like studies and reports, and looks at it closely to find common themes. The findings show that AI does make diagnoses better, makes work run smoother, and helps patients get better. But it also brings up some ethical problems. These include AI being unfair because of how it's programmed, it being hard to understand how AI makes decisions, and risks to people's private information. The social side of things is that AI could either make health differences worse or better and change the jobs people do, meaning that new training is needed. Clinically, AI makes medicine more accurate but also makes us worry about relying too much on machines and not giving patients enough say. The paper says that we need rules that mix together the law, ethics, and technology to make sure AI is used responsibly. Recommendations include checking AI for bias, building in privacy from the start, working together with everyone involved, and making sure people learn about AI ethics. By balancing innovation with being responsible, healthcare can use AI to make things fairer, more open, and more focused on patients. This is what's needed for equitable care.

Keywords: Artificial Intelligence, Healthcare Ethics, Clinical Decision Support, Privacy, Algorithmic Bias

Introduction

Artificial Intelligence, or AI, has become a significant development. It is really changing healthcare. It's used for everything from helping doctors make decisions to managing the health of whole groups of people. AI is when machines can do things that usually only humans can do, like thinking and figuring things out. (Copeland, 2020). The's not just one thing it can do, it's a mix of things like machine learning, where computers learn from data, and natural language processing, where they understand language. And, of course, there is robotics. All of these things are helping with medical research, teaching doctors, and taking care of patients (Ramesh et al., 2004). The way AI is being used in healthcare has really sped up lately. A lot of money is being put into it, and some people think the global market for AI in healthcare could be worth $61.59 billion by 2027 (Reports and Data, 2021). Others are even more positive. They think it could reach $120.2 billion by 2028, growing by 41.8% each year (Zakaryan, 2021). The fact that we're using AI more and more isn't just about money. It's also about what's right and wrong, and how it affects patients. AI is already helping doctors diagnose things better and work more efficiently. For example, AI can look at mammograms to help find breast cancer, like a second set of eyes for radiologists (Shiraishi et al., 2011). And in cancer treatment, AI systems like IBM Watson have been used to help figure out the best way to treat patients. But these systems have also been criticised because sometimes they give bad advice if they're trained on fake data (Brown, 2018; Ross & Swetlitz, 2018). AI has also been used to try to predict strokes and seizures, and to design diets for pregnant women (Cook et al., 2013; Villar et al., 2015; Rong et al., 2020). These good things show that AI could be a big help in making medicine more specific to each person.

However, because AI is being used so quickly, it's raising some important questions about what's right and wrong. Keeping patient information safe and making sure AI is fair are big concerns (Challen et al., 2019; Verma et al., 2021). People often call AI systems "black boxes" because they give answers, but we don't always know how they got them (Hashimoto et al., 2018). This makes it hard to know who is responsible when something goes wrong, especially if AI gives bad advice that harms a patient. The ethical problems get worse when AI is trained on bad or limited information. This can make existing health problems even worse and lead to unfair treatment (Chen et al., 2021; Madaio et al., 2020). The ways AI is changing society go beyond just doctor's appointments. It could change jobs and how patients and doctors relate to each other. If we start relying too much on AI to make decisions, it could take away some of the human touch and make patients feel less in control (Hashimoto et al., 2018). Also, not everyone has the same access to AI-powered healthcare. People who don't have good internet or can't afford the technology might miss out on the benefits (Bélisle-Pipon et al., 2021). Because of all these tricky issues, most folks agree that we need rules and guidelines for how AI is used in healthcare. We need to make sure it's used in a way that is safe for patients and fits with what we value as a society (Guan, 2019; Gerke et al., 2020). The government

should check AI systems to make sure they're ethical and clear about who is responsible for what (Guan, 2019). Groups like the OECD are saying that AI could help make healthcare more efficient, but we need to be careful about just jumping on the bandwagon without thinking it through (OECD, 2020). The COVID-19 pandemic showed us both the good and the bad sides of using things like telemedicine and AI to deliver care. It really highlights the need to sort out these ethical and practical problems, soon (Spatharou et al., 2020; Lee & Yoon, 2021).

Objectives

Building on all of this, this paper aims to accomplish several objectives.

- First, it wants to look at what AI really is and how it has developed in healthcare.
- Second, it will look at how AI is being used in healthcare, like helping with diagnoses, planning treatments, and making things run more smoothly.
- Third, it will think hard about the ethical problems that come up when we use AI, like worrying about if it's fair, open, and who is responsible, as well as how it affects patient privacy and the relationship between patients and doctors.
- Finally, it will give some ideas for doctors, lawmakers, and tech people on how to make sure AI is used safely and fairly, so we can get the most out of it while still doing what's right.

The paper hopes to add to the conversation by giving a full, story-like view of how AI is changing healthcare, both ethically, socially, and in the clinic. It will also suggest ways to make sure AI is used responsibly and fairly, for a darkly bright future.

Review of related studies.

The body of writing about using smart machines, also called artificial intelligence or AI, in health care, shows that most agree it could change a lot, but it also brings up big questions about what is right and wrong. These questions also include what happens in society, and in doctor's offices. The term AI usually means machines that can do things that humans can do with their brains, like figure things out, learn, and make choices. (Copeland, 2020). Ramesh et al. (2004) talked about how AI was used early on in medicine, they really pointed out it could help with science studies, teaching doctors, and giving health care. Newer writings see AI being used more and more, with lots of money being invested, which means the world market could reach $61.59 billion by 2027 (Reports and Data, 2021), and could even grow by 41.8% each year through 2028 (Zakaryan, 2021). This rise in money shows it’s important to think hard about what it means for our society, and if it is moral to do this.

Experts also show that using AI can make it easier to find illnesses and lead to better results for patients. For example, AI computer programs used in X-ray reading can help find cancer, with systems that read breast X-rays being helpful to doctors (Shiraishi et al., 2011; Dembrower et al., 2020). In cancer treatment, IBM Watson has been used to help plan treatments, but it has been looked at closely becaus'e it suggested unsafe or incorrect treatments when it was trained with fake data (Brown, 2018; Ross & Swetlitz, 2018). Other new things include systems that can guess when someone will have a seizure. Theses have helped to have fewer epilepsy problems (Cook et al., 2013), and tools that can predict strokes early have been very successful (Villar et al., 2015). These researches show that AI could really help make medicine more exact and help patients do better.

Despite these good things, moral questions are a repeating idea in the writings. If computer programs are unfair, it is still a big problem. If the computer programs are trained with information that doesn't show everyone, it could make health problems even worse (Chen et al., 2021; Madaio et al., 2020). Challen et al. (2019) said that patient safety is at risk when AI systems copy human unreliabilities or make outputs that are not checked. The thing about many machine learning models is that they are a “black box”. These risks are made worse by, which makes it hard for doctors to know or ask questions about computer-made suggestions (Hashimoto et al., 2018). This secrecy brings up questions about who is responsible and who has to pay if something goes wrong with the medicine given (Gerke et al., 2020). Privacy and keeping data safe are also big topics in the studies. The use of big data and face finding in health care raises dangers for keeping patient information private and getting their permission to use it (Verma et al., 2021; Saheb et al., 2021). Studies show big problems, like when 2.5 million patient records were seen by others because of Cense AI (Alder, 2020), and when social media data was used to guess someone's mental health without them saying it was okay (Goggin, 2019). Landi (2022) said that computer attacks on U.S. health care systems were the highest ever in 2021, touching 45 million people. These discoveries show that we need to build privacy into the system from the start and follow rules like the General Data Protection Regulation (Voigt & Von dem Bussche, 2017).

From a social view, writings point out both chances and dangers. The AI has been thanked with making health systems work better and giving more access to care, especially through online doctor visits during the COVID-19 time (Bélisle-Pipon et al., 2021; Spatharou et al., 2020; Lee & Yoon, 2021). But, experts warn that using more machines could change how doctors and patients interact and maybe hurt the patient's ability to make their own choices (Hashimoto et al., 2018). What this means for workers is big, with the possibility of doctors losing skills and needing to be retrained to work well with AI tools (OECD, 2020). Finally, the recommendations in the writings say that it's important to have rules and cooperation from different fields. Guan (2019) asked for ethical checks led by the government, while Wolff (2021) found key

things that help AI work well, including risk-adjusted rules, a central technology plan, and performance checks to watch how it affects medicine and the economy. These plans match with bigger calls for people to work together to make sure that using AI makes things more fair, safe, and reliable, instead of making them worse. The writings show AI in health care as something that can help and hurt: It can make things better and faster, but it can also cause new ethical problems. The need for open systems, private safeguards, and strong managing is widely known, and experts say that these things must change as technology gets better. It's important to make sure that AI is added into health care systems responsibly and fairly.

Methodology

This paper uses a narrative review way of doing things, which is good for bringing together lots of information that talks about the many sides of artificial intelligence (AI) in healthcare. Unlike really strict reviews that must follow exact rules, narrative reviews let us look at the big picture when it comes to things like what's right and wrong, how society is affected, and how things work in clinics, which all mix together (Kooli, 2021). The approach helps us really dig into debates about things like unfairness, who is responsible, keeping data safe, and whether patients and doctors trust each other. This gives us a much better idea of what we know right now.

Search Strategy and Data Sources

The search for information was done in big places like PubMed, Scopus, and Web of Science. We also looked at Google Scholar for papers and reports that might not be easy to find. Some important words we looked for were "artificial intelligence," "healthcare," "ethics," "unfairness in algorithms," "privacy," and "help with clinical decisions". Following what Kooli and Al Muftah said, we first looked for titles that had AI, healthcare, and ethics all together. This only gave us three main papers that came out by the end of 2020 (Char et al., 2018; Guan, 2019; Gerke et al., 2020)

Inclusion and Exclusion Criteria

Studies were included if they (1) talked about AI being used in healthcare or public health, (2) discussed what is right and wrong, how society is affected, or how it works in clinics, and (3) came out between 2015 and 2022 to get a sense of current conversations. The both studies that showed actual information and those that were more about ideas were kept, as were analysis's and reviews that mapped out ethical research areas (Saheb et al., 2021). The studies that only talked about how to make better algorithms, without talking about people or what is right and wrong, were not included. The purpose of this review is to talk about real world problems and what should be done, rather than how well computers work.

Analytical Approach

The analysis used a thematic way of looking at things to bring together what the selected studies said. The analysis was based on three big ideas: (1) what's right and wrong, including unfairness, privacy, being able to explain things, and who is responsible (Challen et al., 2019; Chen et al., 2021); (2) how society is affected, such as fairness, changes in the workforce, and trust (Bélisle-Pipon et al., 2021; Hashimoto et al., 2018); and (3) how it works in clinics, including how it fits into figuring out what's wrong and deciding how to treat patients (Davenport & Kalakota, 2019; Somashekhar et al., 2017). The framework gave us a way to see what things were similar or different and to organize our findings into a clear, unclear picture. Where we could, we pointed out real examples of AI being used, like the time IBM Watson was used for cancer treatment and had problems with being accurate and safe (Brown, 2018; Ross & Swetlitz, 2018), or when AI was used to predict seizures and detect strokes early (Cook et al., 2013; Villar et al., 2015). The case studies helped us talk about bigger questions about what is right and wrong and what rules should be in place, including needing to think about "privacy by design" and "privacy by default" to follow data protection rules like the General Data Protection Regulation (Voigt & Von dem Bussche, 2017).

Rationale for Narrative Review

The choice to do a narrative review is a bad one because AI in healthcare is changing so fast and involves so many different fields. The technology is developing faster than the rules can keep up, which makes it hard to figure out what is right and wrong and how society is affected (Gerke et al., 2020). The narrative approach lets us bring together studies that show actual information, essays about ideas, legal analysis's, and policy ideas into one framework. This gives us a complete picture of the challenges and chances that AI brings.

Ethical Implications

The ethical dimension of artificial intelligence (AI) in healthcare is one of the most widely discussed areas in the literature. It reflects a shared recognition that technology adoption must be carefully balanced against patient rights, professional responsibility, and societal values. Challen et al. (2019) argue that clinical safety is the central concern, given biased or poorly validated models can perpetuate harm at scale. Ethical dilemmas are not hypothetical, as they are already present in areas where AI models have been integrated into diagnosis, treatment planning, and population health management.

Algorithmic Bias and Fairness

One of the most serious challenges is algorithmic bias, which occurs when training datasets reflect structural inequities or underrepresent certain patient populations. This can lead to disparate clinical outcomes, such

as misdiagnoses or inappropriate treatment recommendations for minority groups (Chen et al., 2021). Madaio et al. (2020) note that even well-intentioned AI tools can amplify existing societal disparities if fairness is not explicitly embedded into their design, and for example, algorithms trained on data from predominantly urban, high-resource hospitals may not generalize well to rural or low-resource contexts, potentially producing pretty unsafe recommendations. The literature therefore calls for inclusive data collection practices and validation across diverse populations, so that you can mitigate such risks. Bias in AI is not merely a technical flaw, rather an ethical problem because it undermines the principle of justice in healthcare. The ethical imperative is to ensure that the benefits and burdens of technological innovations are equitably distributed. As Guan (2019) suggests; government intervention through ethical audits and fairness assessments may be necessary to hold developers and implementers accountable. The Organisation for Economic Co-operation and Development (OECD, 2020) further underscores that AI should be trustworthy, explainable, and fair in order to maintain public confidence in health systems.

Transparency and Explainability

Transparency in algorithmic design is closely related to the issue of explainability, often referred to as the black box problem. Many AI models, particularly deep learning systems, produce results without providing an interpretable rationale that clinicians can evaluate (Hashimoto et al., 2018). This lack of explainability complicates shared decision-making and places clinicians in a difficult position, and it kind of feels like they must trust an algorithm without being able to fully understand its reasoning. Dilsizian and Siegel (2014) emphasize that in clinical imaging and diagnostics, explainability is crucial for patient safety, cause misinterpretations can have life-threatening consequences. Scholars argue that explainable AI (XAI) frameworks must be prioritized, which enables healthcare professionals to trace model outputs back to the data and decision rules used. This not only enhances clinical confidence, but also strengthens the ethical principle of beneficence by reducing the risk of harm. The challenge lies in balancing model complexity with interpretability, a tradeoff that is at the center of ongoing research in AI ethics.

Accountability and Liability

The integration of AI into clinical decision-making raises pretty critical questions about accountability. If an AI system contributes to a misdiagnosis or adverse patient outcome, who bears responsibility; the clinician who used the tool, the hospital that deployed it, or the company that designed the algorithm? Gerke et al. (2020) highlight that both the United States and Europe are struggling to update legal frameworks to address this emerging problem. Traditional malpractice law assumes that a human actor makes clinical decisions, but machine learning systems introduce a third-party actor that shifts the dynamics of responsibility. This challenge is compounded by the probabilistic nature of AI recommendations. For

instance, IBM Watson's unsafe treatment recommendations, which were partly due to training on synthetic rather than real-world data, illustrate that human oversight is essential (Brown, 2018; Ross & Swetlitz, 2018). Nonetheless, even when clinicians review AI outputs, the risk of automation bias over-reliance on algorithmic advice remains significant. Ethical governance must therefore specify the boundaries of human versus machine responsibility and establish clear protocols for auditing AI decisions.

Privacy, Data Protection, and Governance

Another major ethical challenge is patient privacy and data governance. The AI systems depend on large volumes of personal health data, including genomic, behavioral, and sometimes biometric information. Verma et al. (2021) and Saheb et al. (2021) argue that the risk of breaches and misuse is increasing as health systems become more digitized. Landi (2022) reports that 45 million individuals in the United States were affected by healthcare cyberattacks in 2021, the highest figure ever recorded. Alder (2020) documents the exposure of 2.5 million patient records by an AI company, while Goggin (2019) describes how Facebook used AI to infer users' mental health status from posts without explicit consent; both cases illustrating the magnitude of the threat. Legal frameworks such as the General Data Protection Regulation (GDPR) seek to mitigate these risks by embedding principles like privacy by design and privacy by default (Voigt & Von dem Bussche, 2017). These principles limit data collection to what is strictly necessary and ensure that users retain control over their information. However, compliance remains uneven across regions and institutions. Klugman et al. (2018) also raise concerns about the erosion of informed consent in digital environments, where patients often agree to data-sharing through lengthy contracts they may not read or understand.

Existing Ethical Guidelines and Recommendations

The literature converges on the need for comprehensive ethical guidelines to govern AI use in healthcare. Wolff (2021) proposes a framework built on four pillars: risk-adjusted policy, centralized technology architecture, mandatory AI ethics education for clinicians and developers, and metrics to monitor both medical and economic impact. These recommendations align with the OECD's (2020) call for trustworthy AI and with Char et al.'s (2018) argument that algorithmic errors and decision-making processes must be systematically addressed. The ethical discourse stresses that AI must be deployed in ways that enhance rather than compromise patient safety, autonomy, and equity. This requires transparent models, bias mitigation strategies, robust legal frameworks, and proactive training for both clinicians and technologists.

Social Implications

The social dimensions of AI adoption extend beyond individual ethical dilemmas to encompass systemic effects on healthcare delivery, workforce roles, and population health equity. AlAhmad et al. (2021) argue that AI adoption enhances efficiency and performance, potentially reducing costs and expanding access to services, howevr, this transformation is uneven and can exacerbate existing disparities if left unchecked.

Access and Equity

AI has been credited with expanding access to care, particularly through telemedicine platforms that broadened service availability during the COVID-19 pandemic (Bélisle-Pipon et al., 2021; Spatharou et al., 2020; Lee & Yoon, 2021). The benefits are not equally distributed. Populations with limited internet access or digital literacy may be excluded from AI-enabled care, reinforcing the digital divide. OECD (2020) cautions that health systems must be redesigned to ensure equitable access, while Saheb et al. (2021) stress the importance of addressing social determinants of health when designing AI interventions.

Workforce and Professional Roles

AI adoption also alters the roles and responsibilities of healthcare workers. Davenport and Kalakota (2019) note that AI systems can automate routine tasks, allowing clinicians to focus on complex cases. But this also carries the risk of deskilling, as over-reliance on automated decision support may erode clinical judgment over time. Hashimoto et al. (2018) observe that surgeons and physicians may face a paradigm shift in training, requiring new competencies in AI oversight and interpretation. Training initiatives are therefore necessary to prepare the workforce for collaborative human-machine interaction.

Public Trust and Perception

Public perception of AI strongly influences its acceptance. Trust can be undermined by reports of unsafe recommendations or data breaches, as in the case of IBM Watson (Brown, 2018) or Cense AI (Alder, 2020). Conversely, transparency about model performance and limitations can foster trust and encourage patient engagement. Bélisle-Pipon et al. (2021) argue that public involvement in technology assessment is key to legitimizing AI adoption and ensuring that its benefits align with societal values.

Clinical Practice Implications

The clinical implications of AI are transparent, as they impact how doctors make diagnoses, plan treatments, and ultimately determine the outcomes for patients. AI is getting used more and more in computer systems that help doctors make decisions, giving them suggestions based on patient info. The one Dilsizian and Siegel (2014) say that AI makes things more personal in heart stuff and imaging by using a whole lot of

data. Somashekhar et al. (2017) showed that IBM Watson, which is an AI, was just as good as a bunch of doctors discussing cancer cases, which means AI could be a second opinion but not take over for doctors. The way things are going, with medicine being run by computers a bit, that changes how doctors and patients get along. Though AI might make things faster, it could mean less face-to-face time and patients not feeling in control if they don't understand what the AI is doing (Hashimoto et al., 2018). They have to make sure patients and doctors still decide together, with the doctor explaining what the AI says in a way that makes sense, so patients still trust them.

AI being good at figuring out what's wrong with you is its best part. Algorithms can see skin cancer (Tschandl et al., 2020) and read X-rays like a doctor (Majkowska et al., 2020). However, people might trust AI too much, even if it is wrong. Ross and Swetlitz (2018) point out that sometimes Watson gave bad advice, which means they need to keep checking it even after they start using it. Getting AI used everywhere means making sure everything works together, the data is all the same format, and it's ok with the rules. Bukowski et al. (2020) talk about how hard it is to put AI into how doctors work together, because not all hospitals are ready for it. OECD (2020) and Wolff (2021) say they should make like, a center, and have rules to make sure AI actually helps patients and doesn't waist money. From ethics to social stuff to how doctors use it, studies show that AI is a double edged sword. It helps but also brings new problems. Ethical things mean fixing biases, being open, and taking responsibility. Socially, AI should be fair and help workers adjust. Clinically, it should help doctors, not replace them, with ways to stop people from relying on it too much. These new innovations are darkly lit in some cases.

Discussion

The review of the literature, along with the thematic analysis, shows that there is a weird but kinda tense back and forth between the way tech is changing and the right and wrong, social, and doctor-y stuff in health care. AI is like a thing that can cut both ways – it could make getting a diagnosis right better, speed up how things get done, and bring down how much things cost, but at the same time, it can make new problems with keeping things private, who’s to blame, and things being fair, according to a couple of sources. This part synthesizes the information from these sources, examines how it fits with existing perspectives, and considers what it all means for how things are run, the role of doctors, and what we should look into next. A big thing that keeps arising is that AI is advancing faster than we’re establishing guidelines for what’s okay and what is not. One study says that mistakes made by computers could become the way things are done in medicine, and if we don't stop it, these mistakes could become the norm. And there are examples, like that IBM Watson thing that wasn’t giving safe advice on cancer treatment, which shows that computers messing up isn’t just an idea, it’s actually happening. These sort of issues point to the need to have good

ways of keeping an eye on things after AI is being used, so we can catch and fix mistakes. Compared to what's been looked at before, this puts a big focus on making things easy to understand as super important for using AI the right way. One source said that if people can't get what a computer is doing, they won't trust it because doctors have to use what it says without knowing why. Some folks want everything to be open and easy to see, but others think it might be better to find a middle ground between being right and being able to understand, especially with those deep learning models. This tight spot shows that we need to look into ways to make AI easy to understand without losing how well it works, so doctors and patients can know what's going on.

Another big thing is how things are changing with who's to blame when AI is involved in health care. The thing is doctors are usually the ones calling the shots and they get hit with the responsibility for when thing's ain't quite right. When we toss machine learning into the soup, the blame gets spread out between the people who make the AI, the companies that sell it, and the hospitals. And; that messes with malpractice cases and might get doctors in trouble even if they didn't have total control over what happened. Some people think we need rules that take the risk into account and make it clear who's doing what. These rules wouldn't just make doctors feel better, but they'd also give patients a way to get things fixed when a computer messes up and causes harm.

Fairness is still a big deal, because AI could either make things more fair or less fair when it comes to health. The stuff that's been written shows two ways that things could be unfair: some people can't get to AI-powered care, and the results can be biased because the info used isn't representative. During the big sickness, using computers for doctor visits made things easier for some, but left behind people who don't have good internet. Also, computers that are trained on data from rich places might not do so hot when they're used in places with fewer resources, which could just make things worse. This all sounds like what someone else said: that fairness has to be built into AI from the start, and that everyone should have a say. So, the policies need to deal with both the computer stuff and the unfairness in the computers themselves. Putting money into the computer stuff can help knock down walls, while rules about checking for bias can make sure that AI stuff is okayed for all types of people before it's used. Some organization wants a new system that puts being good at what it does first without messing with fairness – something that's becoming super important as hospitals deal with people getting older and costs going up.

The social part of AI also means changing what people do in health care. Someone pointed out that AI can take some of the easy stuff off doctors' plates, giving them time for tougher choices and talking to patients. But, there are warnings that if we lean on computers too much, doctors might lose some of their skills as they stop making their own choices. The answer isn't to fight the computer stuff, but to mix it with training

that helps doctors think about what the computers are saying. Someone else thinks that ethics and knowing about AI should be a must in med school, so future doctors can use computers in a good way. Also, it's important for different people to work together. Someone else wants computer people, ethics people, and doctors to team up and make systems that make sense in the real world. This means the tech stuff will fit with how people work, the rules, and what's right and wrong.

For patients, AI promises to be better at diagnosing and catching things early. Studies on finding skin cancer and reading chest pictures show that computers can do as well as, or even better than, radiologists. Though, trusting computers too much is still a problem: doctors might just go with what the computer says even when it doesn't seem right. This is why it's important to have a person in the mix, where AI helps but doesn't take over. Keeping an eye on things after they're being used is key to making sure the computers don't start messing up over time, especially as the people getting sick change. Re-teaching the computers with new data, plus having people watch over them, can cut the risk of things going downhill and keep patients safe. Keeping patient info private is maybe the biggest problem we've found. When we look at health care data breaches, where millions of Americans got hit, it's like, wow! – shows that what we're doing now isn't enough. It's advised that we should use ways that keep data collection to a minimum and build security into the systems, as well as using privacy by design. But the tech stuff needs to go with getting real okay's from people. It has been noticed that those digital okay documents are often too confusing for people to understand, which makes you think about whether people really have a choice. Making things easier and giving patients control over their data might make them trust things more and keep things on the up and up.

What others have said about AI in health care has mostly talked about how well it works and whether it's doable. While they knew there were ethical issues, they didn't really dig deep into them. This brings ethics to the front, making it a main thing to think about, and pulling in worries about bias, being able to understand things, and fairness into how we talk about patient outcomes. It also makes the talk bigger by connecting problems for individuals to bigger challenges, like whether the rules are ready and what people need to learn. This big picture view is what we need to make good ways of running things that can keep up with all the new stuff. The findings here mean a lot for the rules and how things are done. First, we need to make the rules the same so there are standards for making sure things are okay, being able to understand them, and watching them after they're being used. We might need different countries to team up since AI stuff is often used across borders. Second, we need to get people involved. It's been said that putting patient opinions in health tech assessments can make things more real and line up the new stuff with what people want. Third, we need to make ways to measure how well things are going, not just with patient outcomes,

but also with ethics and fairness. These measurements would let us keep looking at how AI is hitting hospitals and make things better over time.

So, the stuff we've looked at shows a place where tech can do a lot, but it's also really complicated ethically. AI can make things more effective, help with accurate medicine, and make people healthier – but only if we go slow and deal with bias, keeping things private, and making sure people are responsible. This talk says again that the future of AI in healthcare needs.

Conclusion

The integration of artificial intelligence, or AI, into our healthcare is a really big change. The change is reshaping how we do things like find out what's wrong, treat people, and even how the office work gets done across the globe. This look at AI has shown as that, while AI could be amazing for making healthcare more correct, faster, and better for patients, it also brings up some tricky questions about what is right and wrong, how society works, and how healthcare is provided. We cannot just ignore these questions. The proof shows us that things like when AI is biased, when we can't see how it makes decisions, when patient's privacy is at risk, and when it's hard to figure out who is responsible all really need our attention fast. Scholars have explained that keeping patient information private and making sure things are fair should be what we focus on most. We need legal and ethical rules, and not just to follow the law, but also to keep people's trust in our healthcare places. People also suggest a secure and scalable model lifecycle management framework that makes sure that privacy and following the rules are part of how we make AI from the very start. All these things show that we have to think about what is right and wrong at every step, from when we get data to when we use the AI, instead of just thinking about it later.

Outside of legal and technical stuff, there's also a really pressing social side to all of this. Not everyone has the same chance to get AI-powered care, and this could make health differences even worse if we don't deal with it. People highlight that communication strategies and trauma-informed approaches can improve how people feel about their mental health. Their ideas can help us when we're using AI, because they tell us that the technology needs to be used with caring communication that understands the patient's life and makes them feel safe. This is extra important when we're using AI in sensitive areas like mental health, cancer, or when treating kids, where it is important to care, and have a working relationship. The future of AI should also use it as a way to help people who may be left out and to make education better. It has been argued that AI could really help people with learning issues, change how we see disabilities, and lower stigma with helpful technologies. This makes healthcare and schools think of AI as more than just a tool for the doctor,

but also as a way to make the world better for everyone. This shows that the world and its people change how we accept and trust new technologies.

If we look forward, we can see that using AI has to be something everyone helps with, including the people who make it, doctors, people who think about what's right and wrong, lawmakers, and patients. This is what someone recommended, with using risk-adjusted policy frameworks and key performance indicators to check the clinical and ethical impact. Like, this paper has emphasized, AI should help human experts, not replace them. The goal is for a balance, using machines for data but having people to oversee things and care for others. This will help stop any unfairness in the machines and keep patients able to make choices for themselves. In the end, using AI in healthcare isn't just a question for science, but a question for our morals and our society. It will only work if we can balance new ideas with fairness, speed with caring, and machines with making sure people are responsible. By thinking about what's right and wrong when we create, manage, and use AI, and by working together across different fields, healthcare can use AI to make a future that's fairer, clearer, and more trustworthy. The goal, not just to make things work better in the clinic, but also to make sure that AI helps create a healthcare system that treats everyone with respect, protects their rights, and makes things better for everyone.

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