

AI and It's Impact on Medical Practitioner Shortages and Burnout

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The healthcare system has always been a harsh environment, not just with how hospitals treat patients but also how they overwork their employees, which could cause stress and fatigue, which could lead to different malpractices or not the best decisions being made by medical practitioners. According to the [American Academy of Physician Assistants](#), exhaustion impacts nearly 43% of RNs, who are twice as more likely to make major medical errors than their peers. According to [a BMJ Journal of Health and Care Informatics](#) written by John Sather and R Andrew Taylor, AI has immense potential to reduce both cognitive and administrative burdens that contribute to medical practitioner burnout in many different ways, causing them to quit, leading to this shortage.

This is prevalent in many places, like in the Midwest. Out of a population of 6,833,037 in Indiana there are only 67,350 RNs which indicates there being a 9.86% of nurses per 1,000 of the population. This number, while seeming low nurse/population wise is higher than some other states as stated by the [Nurse Journal](#). In 2022, 56% of practitioners around the world suffered at least one symptom of burnout; in 2023 after AI was more used, the burnout rate decreased to 48% according to the [American Medical Association](#). What is AI doing that is lowering burnout rates in medical practitioners, especially nurses around the world and how might this impact people?

“AI has been a thing in the medical field ever since the 1960s to help out with biomedical procedures, primarily mental issues at the time, but as technology has gotten more advanced to identify and treat physical conditions, the advancement in technology has made AI more readily able to correctly analyze certain markers and identify ways to prevent issues,” said [Alexander Krohannon](#), a professor of biometrics from IU who has developed methods to study drug-protein interactions, which AI has utilized to identify health factors putting humans at risk of diseases.

AI Helping with Medical Practitioner Shortages:

The same [American Medical Association](#) article mentioned how in 2021-2022, around 58% of nurses and other practitioners left their jobs due to stress with patient load, which was higher as a result of rising COVID-19 symptoms. According to CNBC, there is still a percentage of newly hired nurses who quit their first year of working, around 33% each year, so while there is still what could be considered medical practitioner burnout in places like Indiana, as seen in the [Nurse Journal](#), AI has been slowly fixing this issue as it's gotten more advanced and has been used more frequently for different medical procedures, whether that be creating and sending out medical document, repurposing different medicine components to come out with potentially different cures for diseases, or checking for cancerous polyps or other symptoms of cancer or any other serious disease.

According to [forseemedicine](#), a website run by medical technology specialists who look for new diseases using new machine learning, AI is used for predictive analysis. This means that healthcare AI can analyze patterns in a patient's medical history and current health data to predict potential health risks. This capability can help providers offer the necessary preventative care required to help patients become healthier at a lower cost than typical before a disease worsens. This lessens the workload of medical practitioners by quite a lot. Checking patient's medical history and current health data to predict health risks is one of the most common and tiresome things that practitioners do, which is likely causing burnout and having them quit medical jobs, as stated by the [Agency for Healthcare Research and Quality](#). AI also uses the same imaging equipment to check for such factors.

According to [students of Dartmouth College of Science](#), AI has diagnosed patients and has effectively assisted them by giving them the right interpretations of their MRI, CT, X-rays and other imaging modalities. It can then schedule appointments a patient might need and automatically transcribe billing details, which also helps lessen the workload of medical practitioners who will still need to do these tasks but less of them in cases. According to an article in the [Healthcare journal](#) written by many authors, AI acts as a quicker way to identify risk factors for diseases that humans might miss and is shown to make health trips quicker.



Patients and medical vehicles wait outside where Alexander Krohannon and Emma Doud work with biomedical procedures and where patients are treated with AI services. According to the American Health Association, the hospital operates with a \$9.22 billion operating revenue, giving it the chance to receive the AI equipment it uses today. Found on IU health page of photos that can be used for media use.

Problems with AI that could lead to more burnout:

Despite all the good AI can have in lessening burnout, it can also make medical practitioners feel stressed in ways they haven't before. According to a 2025 study by the [Health Affairs Journal](#) written by Matheny, Goldsack, etc., doctors might get stressed thinking about the nature of AI making decisions based on human cognitive strengths and how that could raise their patient's ethical concerns. The main issue pointed out in the journal is that being so new and unsecured, personal attacks on AI data pipelines by hackers who gain access to medical history and leak them are more likely to happen. This would cause practitioners the need to come up with solutions to solve these issues that

cause problems with their patients, leading to unnecessary burnout that could've been avoided by not using AI.

“I have seen breaches into AI medical history records with my own eyes,” said [Jason Cannon](#), a professor of Purdue Health Sciences, as he told of a scenario at a hospital where many files were breached. “Nurses and doctors alike were super frantic. Technicians were trying to find a way to resolve the issue.”

AI's implementation has also stressed medical practitioners in other ways, which could eventually lead to burnout.

“I've been creating biomarkers to discover certain types of cancers similar to AI for the past 20 years. I don't worry so much about losing a job, but I can see how a newer employer might feel afraid they might lose their job. You know, getting fired and being replaced by AI. It causes needless stress,” [Emma Doud](#), an IU doctor of Medical Health, said, sharing her concerns.



A look into one of the IU hospitals shows the more technological equipment used to treat and check for patients' symptoms in a timely and cheaper manner. This AI technology is new and used uniquely. Found on IU health page of photos that can be used for media usage

AI in healthcare today:

AI in the healthcare field is not new, but the major advances being made can do things that have led to less burnout among medical practitioners in the world. It can, though, lead to stress in other ways, but the pros seem to outweigh the cons. One wonders how much more of an impact AI can have on the problem of shortages of medical practitioners today.

[Link showing photos can be used for media usage](#)