

# "IF YOU THINK (AI) IS JUST SOME PASSING FANCY, YOU'RE MAKING A MISTAKE."

By Jack Brown, BRI Board Member

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The Fourth Industrial Revolution, or Industry 4.0, is upon us, and it will likely profoundly change how we experience healthcare. At the heart of this transformation lies Artificial Intelligence (AI), the technology that's driving innovation, enabling us to do things we never thought possible. While AI may provide benefits to healthcare systems, it will also disrupt physician jobs and the doctor-patient relationship.

**AI has rapidly advanced and is demonstrating its huge potential to assist and disrupt healthcare.**

Here are some examples:

- Chat GPT recently passed all three parts of the U.S. Medical Licensing Examination. As the researchers note "Chat GPT performed at or near the passing threshold for all three exams without any specialized training or reinforcement."
- 80% of Americans believe that the quality of AI assisted telehealth could match that of in-person consultations – up from 43% of Americans pre-pandemic.
- Google's AI algorithm outperformed six radiologists in determining if patients had lung cancer. The algorithm, which was developed using 42,000 patient scans (using low-dose computed tomography) from a National Institutes of Health clinical trial, detected 5% more cancers than its human counterparts and reduced false positives by 11%.
- An artificial intelligence (AI) tool—that was trained on roughly a million screening mammography images—identified breast cancer with approximately 90 percent accuracy. To validate AI's 90% accuracy was comparable to human radiologists, researchers independently presented 720 screening mammogram exams taken from the same data set to 14 radiologists. Results showed that the AI tool was equally as accurate as the experienced radiologists when presented with the same data.
- At Stanford University, computer scientists developed an algorithm for diagnosing skin cancer, using a database of nearly 130,000 skin disease images. In diagnostic tests, the algorithm's success rate was almost identical to that of 21 dermatologists.

- The latest version of ChatGPT passed the uniform bar exam with a score nearing the 90th percentile of test-takers.
- ChatGPT was a top performer on the Wharton MBA Final.

Chat GPT, the generative AI, is getting a lot smarter when it comes to health care, and many clinical diagnoses and decisions once made by physicians, may soon be made by machines.

### **Hospitals are under extreme financial pressure, and AI will be one of their solutions**

The financial devastation caused by COVID-19 has caused hundreds of hospitals to lay off or reduce pay for workers. Many hospitals are now scaling back services and some of them are closing their doors. Hospitals and large healthcare systems are desperate to leverage AI advancements to optimize their operations and reduce costs. According to the Federal Center for Medicare and Medicaid Services, the bulk of healthcare costs fall into three buckets: hospital care, physician/clinical services and prescription drugs. Efforts are underway to apply the power of AI to lower costs in all three categories. One obvious impact of AI on our broken healthcare system will be the impact on physician employment.

### **AI impact on healthcare jobs**

*"...health care providers who will lose their jobs over time will be those who refuse to work alongside artificial intelligence."* – Thomas Davenport, president's distinguished professor of information technology and management.

Substituting the human touch of physicians with cost reductions of AI will be a focus of ongoing debate. Nurse practitioners and physician assistants, with the assistance of AI, will be used to replace some of the physicians claiming interdisciplinary collaboration. *"AI will promote interdisciplinary collaboration between nurses, physicians, ... ensuring that each member of the care team is effectively utilized."*

Many physicians and nurses are already aware of the role AI will play in the cost reduction process. 71% of doctors and 68% of nurses believe their jobs have changed considerably in the past 10 years, with many saying their jobs have gotten worse. 69% of physicians report being overwhelmed with the current volume of data, and predict the widespread use of digital health technologies to become an even more challenging burden in the future.

Healthcare workers are already reacting. The "Clinician of the Future" global report reveals that *"Up To 47% Of U.S. Healthcare Workers Plan To Leave Their Positions By 2025."*

A report by McKinsey & Company agrees that AI will change the role of the physician, further removing them from their patients. *"The role of the physician will shift from direct patient care to a data manager and healthcare strategist."* Physicians who remain employed will be those who are equipped and willing to participate in data management and integrated diagnoses. When AI produces unexpected results, remaining physicians will need to understand why. As with Electronic Health Records (EHRs), physicians will also personally assume much of the legal exposure for bad AI decisions. In a recent survey, physicians predict that over the next 10 years "technology literacy" will become their most valuable capability, ranking higher than "clinical knowledge."

AI will be used to develop personalized treatment plans by analyzing large amounts of patient data, and to reduce healthcare costs associated with the time spent by a human physician.

### **New competitors will further stress traditional healthcare players**

The emergence of new healthcare competitors, driven by AI, is challenging traditional healthcare providers by offering innovative solutions that may improve patient care, reduce costs and increase patient accessibility. As AI technology continues to advance and integrate into the healthcare industry, the competitive landscape is expected to evolve further, with more companies entering the market and pushing the boundaries of what is possible in healthcare. These new competitors can be categorized into two groups: technology and data-driven companies entering the healthcare space, and startups focusing on AI-driven healthcare solutions.

Competitors such as Google/Health/Deep Mind, IBM Watson Health/Merative, Oncora Medical, Cloud MedX Health, Babylon Health, Corti, and the Butterfly Network will all use AI to compete with traditional healthcare players. Unholy alliances between traditional and new healthcare companies will form.

### **Patient empowered Self-Care will siphon off work and income traditionally done by physicians**

Patients are already starting to rely heavily on self-care applications for their healthcare needs. Self-Care will include mobile applications, wearable devices and telehealth platforms. Self-care will enable untrained consumers to perform common healthcare tasks without the need for direct interaction with physicians. For example, AI applications in telemedicine include remote patient monitoring, data analysis, and intelligent diagnosis.

Concerns about data privacy, security and ethical considerations make it more important than ever to address the AI dilemma today.

Soon, AI will become an everyday tool for diagnosis. *"If you think (AI) is just some passing fancy, you're making a mistake. In radiology and pathology, it's going to affect*

*everything you do.*” – Dr. Paul Chang, a professor of radiology at the University of Chicago Medical Center

In part 2 and 3, I will discuss how to spot the opportunities early, act on them, and succeed in preserving or even improving the doctor – patient relationship.