
THE ETHICS OF AI IN HEALTHCARE INDUSTRY: OPPORTUNITIES AND RISKS FOR AUDIT AND COMPLIANCE PROFESSIONALS

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ABSTRACT

Since past few years, we have encountered with words like "AI" or "Artificial Intelligence," "Machine Learning," "Block-chain Technology," "Data Centres," "Cloud Computing" etc. However, let me explain that 'AI' is not a completely new phenomenon and in the field of healthcare it has been in use since 1970s and has gained traction as decades passed by with its use increasing and becoming more sophisticated.

This article is an attempt to decipher ethical use of AI in healthcare domain and look at the possible opportunities and risks given there are always two sides to anything which is meaningful.

As compliance and governance professionals who are associated with healthcare industry, AI will be helpful in the context of true and fair use of the tool to map the compliance in terms of compliance of the healthcare industry in terms of using AI for dashboard creation, monitoring of vital reporting related to processing of claims, adherence to regulatory requirements to mitigate legal risks, upholding patient safety, enhancing financial integrity and promoting ethical boardroom practices.

Introduction

The combination of AI and healthcare creates an interesting mix given the large-scale implications it may have in a country like India which has ~5 practising doctors per 10,000 population and this gap is expected to marginally improve to ~7 practising doctors per 10,000 population by the year 2030, still it will be way below ratio recommended at 1:1000 as per World Health Organization (WHO).¹

The point I wish to make is that technology like AI can play a significant role in helping bridge such glaring gaps mentioned above so that accessibility to good healthcare can be made available to all citizens of India and globally, irrespective of their economic strata in the society.

Importance of use of AI cannot be underestimated given its scope and ability to cater to improve drastically accuracy of diagnosis, analyse vast amounts of data, help in safe keeping of medical records and help the medical practitioners in diagnosis.

High quality healthcare at fraction of current costs is need of the hour in a populous country like India and AI can be a boon in this regard.

History of AI in Healthcare

AI was initially used to help trace biomedical problems and Professor John McCarthy is considered as father of AI. AI program was developed in Stanford University to diagnose bacterial infections and recommend antibiotic treatment of the same. This slowly grew into use of AI for glaucoma consultations, generating diagnoses for more than 500 diseases in mid-1980s, using AI programs for providing primary health care facilities to use in surgical procedures in late 1990s, helping maintain electronic health records etc.

AI in 21st Century²

IBM's Watson AI system was developed in healthcare sphere that focused on natural language processing i.e. technology used to understand and interpret human language. The perceived impact of AI in healthcare sector is multi-fold as mentioned below:

- Accurate diagnosis of diseases and develop treatments for them
- Help prevent diseases altogether

- Economy by saving time, money and improve data management
- Improve patient experiences
- Ensure quality treatment, faster treatment and ensure accuracy in diagnosis that will beat the most experienced medical professionals

Let us now look at few concepts of AI to better understand their use in healthcare industry:

a. Machine learning

This enables precise disease diagnosis, customized treatments, detection of small variations in vital health parameters which may signal potential health issues.

Deep learning, which is a subset of AI, is used in activities like speech recognition through natural language processing.

b. Natural language processing

This is being used widely for streamlining clinical processes, providing customized and personalized services, improving diagnostic accuracy etc.

For example, use of natural language processing for managing substantial amounts of complex data can be done easily without losing time on manual processing or removing errors while processing manually.

Natural language processing is now becoming a must-have technology and is likely to become even more sophisticated with wide range of applications in times to come.

c. Rule-based Expert Systems

Many electronic health record systems currently make available a set of rules with their software. 'If then' based rules of 1980s have been successively replaced with more sophisticated rules capable of managing large and complex data. There is a limitation on the use of rule-based system with applications made by engineers and healthcare professionals.

d. Administrative Applications

We are witnessing in India, corporate-culture even in healthcare administration with focus on

top-line i.e. revenue and bottom-line growth i.e. profit margins of healthcare systems which invariably will lead to use of AI in the form of administrative applications to manage appointments, patient management, test results processing, claims processing etc. Thus cost-centre side of hospital management will face AI implementation to reduce costs, build efficiency and reduce manual intervention.

Some latest uses of AI

- **Robotic surgery**

Use of AI vide robotic surgery is being widely adopted to ensure precision and reduce the surgery time as well as minimal invasive surgery procedures ensuring quick healing time for patients.

- **Virtual nursing**

AI-assisted nursing is being used to help address issues of staff shortages especially in nursing where training and personal intervention and interaction with patients plays a significant role.

- **Digital communication**

Use of AI to maintain schedules, send reminders to patients on appointments, medicine changes, dosages, change of schedules etc. is an innovation without manual intervention.

- **Medical imaging**

Diagnostic area has seen a change with use of AI to analyse X-Rays, MRI reports, CT-scans, Ultrasounds etc.

Benefits and Opportunities with use of AI as seen above can help us understand that it has a two-fold approach :

- Use of AI and Internet of Medical Things (IoMT) is helping patients with less dependence on manual intervention of doctors and nursing as well as administrative staff
- AI may eventually help patients to have least dependence on manual intervention of doctors and nurses which will be a game-changer in medical history with machines and software taking

over years of medical supervision and indirectly challenging the wide history of medical science due to disruption caused by technology which is gaining acceptance and pace with each passing year with robots having potential to revolutionize end of life care!

Statistics on medical research³

According to California Biomedical Research Association, on an average 12 years is taken for a drug to travel from research laboratory to patient/consumer. Only 5 of 5,000 drugs that begin pre-clinical testing make it to human-testing phase and of these 5 only 1 gets approved for human consumption.

The journey mentioned above will cost on an average 359 million USD for a pharmaceutical company. Use of AI is not new, but the potential to implement it on a greater scale appears to be enormous to reduce the time span and costs which will ultimately benefit patients i.e. end consumers.

Use of AI to detect early-stage heart diseases and cancer can help avert potentially life-threatening episodes and ensure treatment at appropriate stage thereby reducing medical costs and recovery phase for patients.

To quote the same report, according to American Cancer Society, a high proportion of mammograms yields false results with 50% of women undergoing tests getting false cancer alarms. AI has helped achieve 99% accuracy in such instances at 30 times speed, reducing need of unnecessary biopsies.

With average life expectancy improving across the globe, medical and healthcare needs will be required more in the future than ever before, and it is sensible to use technology where desirable coupled with patient care and management.

Is using AI ethical? What are the opportunities and risks associated with AI?

Given the benefits that use of technology in the form of AI can provide, it is difficult to doubt on its effectiveness given healthcare needs attention globally and even more in a populous country like India which is still struggling to even provide primary healthcare facilities in far-flung areas. Even cities are struggling with high cost of medical care which only the rich can afford given the dismal insurance coverage for healthcare even though government schemes

like Ayushman Bharat Yojana have tried to bridge the gap but more needs to be done and use of technology is the most pervasive force to bridge the gap created by economic inequality.

It is no doubt that AI might entail investment in technology and training but ethical use of AI by means of intervention where needed the most by patients which would alleviate their suffering and improve overall medical care will override any issues related to AI's intervention in patient care, Intellectual Property Rights (IPR) issues must be secondary to healthcare crisis that so many nations including India suffers and it is high-time that western nations respect the vast population who deserve better healthcare at fraction of costs they are paying at present!

Transition of AI technology to developing and underdeveloped economies so that they can leverage its use will be critical and training of both doctors and support staff be it nurses, paramedics or even administration in use of AI should be encouraged in both civil and private hospitals in India.

It is important that the gaps created between the rich and poor, haves and have-nots in sphere of health care is minimised to the extent that there is no discrimination at all!

In terms of risks of using AI, I can see below issues:

- Improper technology transfer and training causing disruptions in using AI
- IPR constraints risking use by developing and underdeveloped countries
- At present, healthcare industry is largely manual thus a lot of workforces may get potentially displaced from their jobs which will include doctors including surgeons, nurses, para medical staff, administrative staff etc.
- This issue is being faced across all sectors and healthcare industry will also have to oversee a period of disruption before things settle in and become business as usual
- Patients especially senior citizens and those who do not use technology will also face challenges in terms of adapting to use of technology which could have least manual intervention
- There is a human-touch largely involved which use of technology will change as we could well see robotic and machine intervention which could make the system automated but less human!

- With human mind focused on monetary benefits, it is possible that unscrupulous elements may evolve ways to fleece patients in the name of AI and it is here that lawmakers and law-administrators will have to play a pivotal role to ensure that no injustice and exploitation take place while using technology and AI.
- Lastly, with use of AI, we would be expecting least human intervention but whether AI-use at some point in time may result in technical glitches or inaccuracy will have to be monitored and time will tell if this adoption on full-scale is even advisable as we know that machines have limitations too!

Role of Audit and Compliance Professionals in using AI in healthcare industry

As Audit and Compliance Professionals, healthcare industry is required to maintain records on many areas viz. patient safety, data audit and privacy, financial integrity, accounting and reporting, quality assurance and audits and ethical standards. It is not beyond the scope of an Audit and Compliance Professional to identify gaps in above requirements and create a reporting structure with help of AI to track instances of medication or surgical errors, infection rates post-surgery and redressal of issues, adequate insurance and indemnity clauses to cover instances to which healthcare professionals and the entity could be exposed to, enhancing quality of financial and compliance reporting according to regulatory guidelines to ensure transparent reporting to all stakeholders ensuring fiscal prudence and commitment to compliance measures.

One example of use of AI is where monitoring of receipts from Ayushman Bharat Yojana by which insurance cover is given to the general eligible patients and where there is a time lag of anywhere between 6-12 months could be an area to use AI to drill down the stage where the claims are pending and thereby reduce the outstanding payments due to the healthcare entity.

Another example is using AI to improve the audit practices where the data presentation using AI can help compliance professionals to showcase to the Board of Directors and Management to focus on those aspects which need immediate attention in terms of missing compliances, upcoming compliance events, regulatory hurdles for expansion projects, reporting efficiencies using AI, ESG compliances, E-waste and biological waste-management and disposal efficiencies which are part of compliance management. The risks associated with use of AI relate to improper reporting which needs to be cross-checked and test-checked on sample basis

periodically to ensure that no error has crept up in data and reports presented by governance professionals. So it is no longer about restricting to areas of ROC compliances and filings related to the same and in these traditional areas also AI could be used to develop a dashboard on compliances met and upcoming for instance: MGT-7 and AOC-4 XBRL reporting compliances, DIR-3 and DIR-8 and MBP-1 disclosures by directors, DIR-12 filings etc.

With advent of global outsourcing of compliance activities, Chartered Accountants will be able to leverage AI for global compliance and reporting whilst working at Centres of Excellence (COEs) and Global Capability Centres (GCCs) and Global In-House Centres (GICs) in coming years.

The role of a audit and compliance professionals is only going to expand and not curtail with use of AI in coming years!

Conclusion

There is no doubt that use of technology is the answer to some of the existing problems created by consumerism and materialistic tendencies in society which has expanded the gap between rich and poor day-by-day, but the question that every stakeholder be it the government, law administrators and most importantly the medical profession including the pharmaceutical and research industry need to ponder is **to what extent AI's use will be beneficial and acceptable?** There is much more to AI than mundane use of tools like Chat-GPT or Harvey for use in audit analysis and legal research.

A simple check is that it should be to the extent that rewards do not start creating negative impact on the society especially in a delicate sphere of healthcare which is essentially nurturing a patient back to normalcy without exploitation of his/her body, mind, spirit, and economic resources.

Ethics in use of AI cannot be a subject to ignore as every benefit has an implied cost but what balances the two should be the breakeven point and it is this point that is sacrosanct and needs to be respected and adhered to by all stakeholders.

Patient care is paramount, life care is paramount but most importantly ethical care in which a compliance and governance professional can contribute with help of AI is what is required and no amount of top-line and bottom-line analysis by management and accountants can replace the

thin line of difference that a patient reposes in healthcare system whilst he/she may surrender his/her body, mind and spirit to the healthcare system whether it is manually driven or technology-AI driven!

It's important to be future-ready, future-driven and importantly treat AI as a tool to enhance governance, transparency and reporting efficiencies by reducing risks of errors in reporting and promoting transparency at the same time so that the healthcare industry and its stakeholders can pin-point to everything from basics to the efficiencies of scale and AI can certainly help leverage and it is for us as governance professionals to show the areas of focus, improvement and management and show worth as worthy audit and compliance professionals.

REFERENCES:

1. Statistics as per Indian Journal of Public Health, September 2017 edition
2. Excerpts referenced from Forsee Medical article titled “AI in healthcare” by Steve Barath; can be referred to at <https://www.foreseemed.com/artificial-intelligence-in-healthcare>
3. Excerpts referenced from PwC report titled ‘No longer science fiction, AI and robotics are transforming healthcare’; can be referred to at <https://www.pwc.com/gx/en/industries/healthcare/publications/ai-robotics-new-health/transforming-healthcare.html>