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Ethical Implications and Practical Applications of AI in Modern Healthcare

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Abstract

AI is capable of solving many problems in the contemporary healthcare systems, and its application is likely to enhance the diagnostic process, choose individual treatment plans, enhance the level of patient satisfaction and enhance the organization of the delivery of healthcare. Techniques of machine learning and natural language processing based on AI have revealed their efficiency for diagnosing the illness, getting the positive results and client's oriented recommendations concerning treatment of diseases. Nonetheless, the advancement and use of AI technologies in healthcare brings to the table several innuendos: privacy; security; data control and dissemination; responsibility and prejudice. Luckily however, addressing these challenges needs not only good and advisable policies and guidelines but also cooperation among policy makers, ethicists, technology and health care providers /researchers etc. The purpose of this review is to identify the most common ethical concern regarding the application of AI in health care and the results of practical efforts. It escalates how AI could vary from altering diagnosis approaches, enhancing therapies, controlling documents to raising stress on consumer's details and securing that those leveraging artificial intelligence act morally and brightly. But the process of getting there into the era of benefit realization from this new technology will open more ideas and details into risks such as bias inference in AI models, patient's consent and agency, and accessibility of AI technologies in developing countries and remote areas. In conclusion it will be necessary to be purposely reasonable, to be conscious and very communicative in order to introduce AI into better and convenient and humane healthcare.

Key words

AI in Healthcare: diagnostic improvements, treatment customization, data issues as storage, security, and analysis, ethical concerns, employing AI for predictions, healthcare factors, staff training, precision healthcare, accountability in AI, healthcare disparities, robotic function, AI transparency, legal implications

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1. Introduction

Artificial intelligence continues to saturate healthcare and finds ways to promote the idea and make a significant shift in it. Artificial Intelligence common known as AI is the intelligence, which is displayed by the system or machines while solving the problems, learning or decision making which are believed to be more suited to human beings. In the sphere of medicine, AI is gradually being implemented in more sectors: From such routine procedures as diagnostics and the individual approach to treatment and management to multiple administrative sentences. AI is not only unique, but also revolutionary in the healthcare sector since it can significantly change the practice of the sector [1].

It is obviously possible to admire AI most of all for one thing: its ability to analyze a large amount of medical data quickly and with a high level of efficiency. EHRs, wearable devices and advanced DI have now placed the healthcare provider's data in inconceivable volume. Some of the information can be used by the AI algorithms to pattern, classify and analyze information that the human clinician may not observe. For example, AI can participate in diseases diagnosis such as cancer, cardiovascular diseases or neurological diseases by screening of medical images such as X-Ray, Computerized tomography or Magnetic Resonance Imagery [2].

The use of AI is not just restricted to the presented diagnostics. Out of all the branches of AI, ML and DL are integrating themselves into the concept of 'Treat Different,' which has been constructed and is being administered as a treatment plan based on the genetic makeup of the patient, the record of the patient's illness or health and the lifestyle of the patient. It can also determine how the patient will most be likely to respond to a specific type of therapy in order to be effective and have low incidents of complications. For example, the Hakenberg AI model is being used in oncology to recommend which treatments should be used with reference to precise types of cancer and the genes connected with these types of cancer [3]. As a result, along with the functionality in medical treatment, the superior AI is enhancing the activities in the healthcare aid. Appreciation of artificial intelligence and machine learning such as the NLP and the RPA is being applied in the repetition of tasks such as coding, medical billing, appointment setting and data

entry. The former kind of systems reduces the organizational burden on the health care organizations and allows the caregivers have more time with patients, at the same time improving organizational performance and cost reduction [4].

AI is increasing patients' engagement in the treatment program and contributing to the enrolment of more people to health centers. Digital health advisors or chatbots assist patients to gain secure access to health information, book an appointment, or even receive a preliminary consultation at any time due to artificial intelligence. These tools can be very effective in rural areas or when there is a systemic overload as is the case with Covid 19 presently. Artificial intelligence in healthcare is gradually paving for its rightful place as an essential technology to drive forward the healthcare systems of the world Clinicians are employing advancements in smart technologies to improve patient experience, fashion out new clinical models and bring new perspectives to the healthcare systems. It also creates new types of ethical issues that need to be known and addressed to allow the proper implementation of ethical and fair health care AI [5].

2. Negative Implications of Artificial Intelligence, why Artificial Intelligence should not be used on Health Care

This is because there are multiple ethical concerns resolved by AI technologies have not been implemented in the medical industry. They are as follows mainly because AI integration schemes are an integral feature of numerous characteristics of patients, decisions made by clinicians, and patient privacy. Ethical consideration on AI in some of these areas is still a mystery on; responsibility, decision making, decision authority, acquisition and sharing of data, race, color, gender and anything that might make a health care professional to be bias with any patient and so on [6].

Accountability and Liability: However, one of the main concerns that is closely linked with the application of technologies based on AI in the sphere of health care has to do with the question about the responsibility in case if AI should make a wrong decision and even harm the patient. If an AI system misdiagnoses a patient or recommends an inappropriate treatment, the question arises as to who should be held responsible: The question is who is guilty; it is the creators of the AI

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algorithm, or the healthcare provider that has decided to adopt the system or the actual AI system itself? In some cases, medical liability traditional approaches do not suffice to meet these new types of challenges [7]. Healthcare practitioners have to be set to assign or share liability in case with mistakes made by AI systems, in order to meet the patient's rights while not imposing excessive loads. Bias and Fairness: It was also used in the program that may bias AI programs developed to learn data such as gender, race or economical level [8].

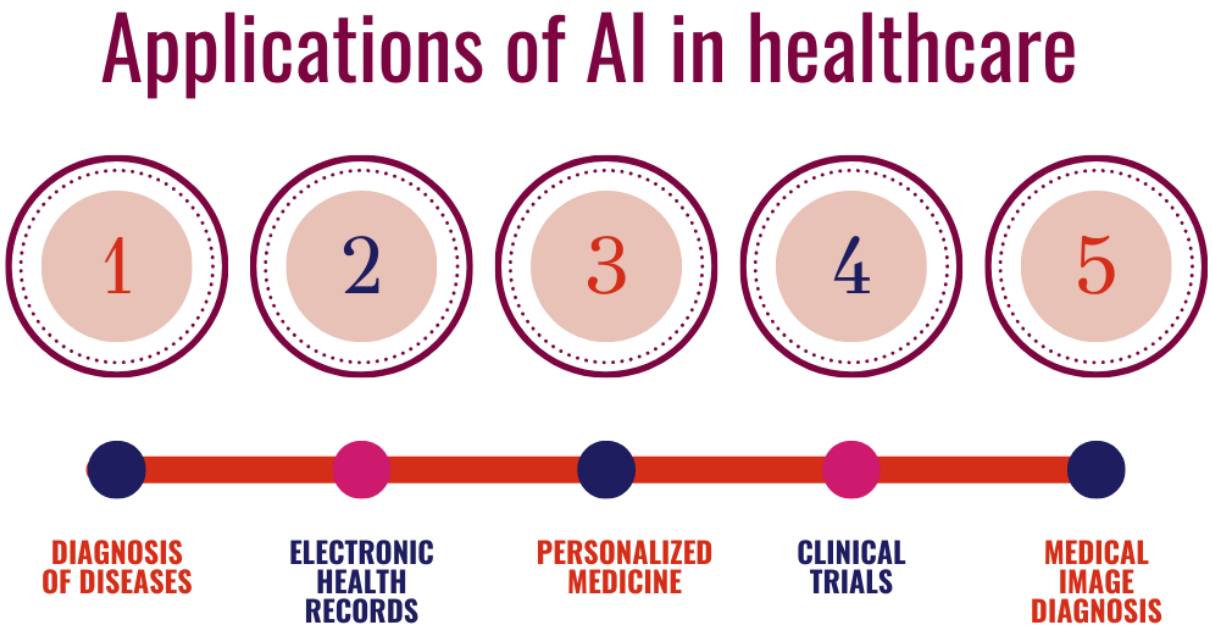

Figure: 1 showing applications of AI in healthcare

That is, those biases can be subscribed unconsciously by AI models and in turn recycle it to make an unfair decision. For example an AI designed to detecting skin cancer will be less effective for black people if the devices that trained the AI contain images of white people. This issue also raises a big question mark over healthcare because even as with the advanced artificial intelligence making the decisions the otherwise marginalized groups in the society are even worse off in terms of their ability to get the kind of medical care that they deserve [9]. To such risks, there is always the need to assess the type of data used in training the AI models; it needs to be diverse and

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adequately sampled the populations being served; on the other hand, the trained AI models needs to be tested and diagnosed of any type of bias before they are released to the market.

Transparency and Explain ability: Although most AI algorithms and particularly the deep learning ones are well-known to be black boxed, their functioning is not easily understandable. Such an aspect maybe worrisome especially if the AI is the one that takes critical health decisions for a patient. In this case for the recommendation given by an AI system to be accepted and implemented everyone including the patient and the health care professional has to have the ability to reason out how the recommendation was arrived at. As in any diagnostic and therapeutic process, the basic rule of explaining to the patient the possible effects of his activity or inactivity can also be applied to the use of artificial intelligence. Explanation of the actions made by AI systems is necessary for having the corresponding trust in the field, and so, AI needs to be transparent [10].

Data Privacy and Security: There are cases in the application of AI in healthcare that the data gathered, analyzed and retained contains patents' information including medical records, genes, and habits. This has in turn given rise to many question and concern on matters relating to data privacy and security. In the detail of the work, the AI systems should be designed in a manner that will ensure maximum protection of the patient data from the unauthorized parties, invasions or misuse [11]. Patients or the user allow only the PHR to be used for AI algorithms and own custody right on data. Based on the above ethical practices that have arisen, the consideration that has been reached regarding the use of AI to gain knowledge on a interplays between the rights of an individual.

Autonomy and Human Interaction: Comprehensive science shows that as the advancement of AI is taken to the next level then the health facility management and the provider's decisions will be heightened, however, there is also a concern that patient experience specifically interpersonal touch will be done away with. That of the regulation and doing of the rights of patients also ends with threat by the ethical principle of autonomy where minimal or little contribution is made by the patient or the professional medical practitioners through the decisions made by the AI systems.

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Hence, using AI, it is possible to speak about the means by which human decision occurs, rather than about the subject replacing it in the sphere of healthcare [12]. Healthcare triage This means to make sure that AI hardly takes over the healthcare providers when it comes to valuing that human touch in treatment only to play the assistant. In accordance it is comprehensible that AI can enhance and even change the sphere of the healthcare but it is also evident that it provoke certain ethical concerns. However, some factors of concerns that will continue to precede health in the future. Healthcare is also in dire need of coming together with the policymakers, technologist and ethicist to develop good, easily understood ethical polices and standards for the use of artificial intelligence technology in the healthcare system. It is for this reason that more emphasis has to be given to the mere ethical issues which have been expounded at length in above passage as a measure of realizing the intended benefits of AI in respect of patient's rights and their welfare [13].

3. AI & Its Role in Diagnosis and Treatment

A concept such as Artificial Intelligence or AI can be recognized as productive for the development of the sphere, primarily in the field of diagnostics and treatments. AI technologies are integrated into client services in a variety of ways in the field of health care, enhancing especially the quality, accuracy and personal approach to patients' treatment. It is not only increasing the accuracy of the diagnostic process but also implementing individual approaches to management built by AI along with the use of ML, NLP, and DL [14].

AI in Diagnostics: That, perhaps, is the largest field where AI is already used in the spheres of healthcare. AI can inspect Wealth of medical images such as x rays, MRPs, CT scan, U-Sonic and so forth, with great accuracy. For instance, high-end, low-power technologies such as deep learning can assist radiologists to diagnose first stage signs of malignancy, heart disease or brain diseases, or other diseases. Literature also reviews that clinically there are utilizations of the above stated machine learning approaches in order to detect careless patterns in the medical images that may lead to lesser accurate diagnosis by clinicians and delayed intervention [15]. They observed that, sometimes, the accuracy of diagnosis by the AI as superior to human radiologist especially when the scale of the tests is enormous and the risk of errors is high in cases that include cancer

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and cardiovascular diseases. Diagnostic technologies are also being used in pathology where example machine learning algorithms is used in analyzing tissues of biopsy specimens and studying conditions such as cancer. These AI systems may also be able to perform better through big data analysis of past health records in an effort to discover otherwise unnoticed patterns that a human organ of vision and insight comprehends [16].

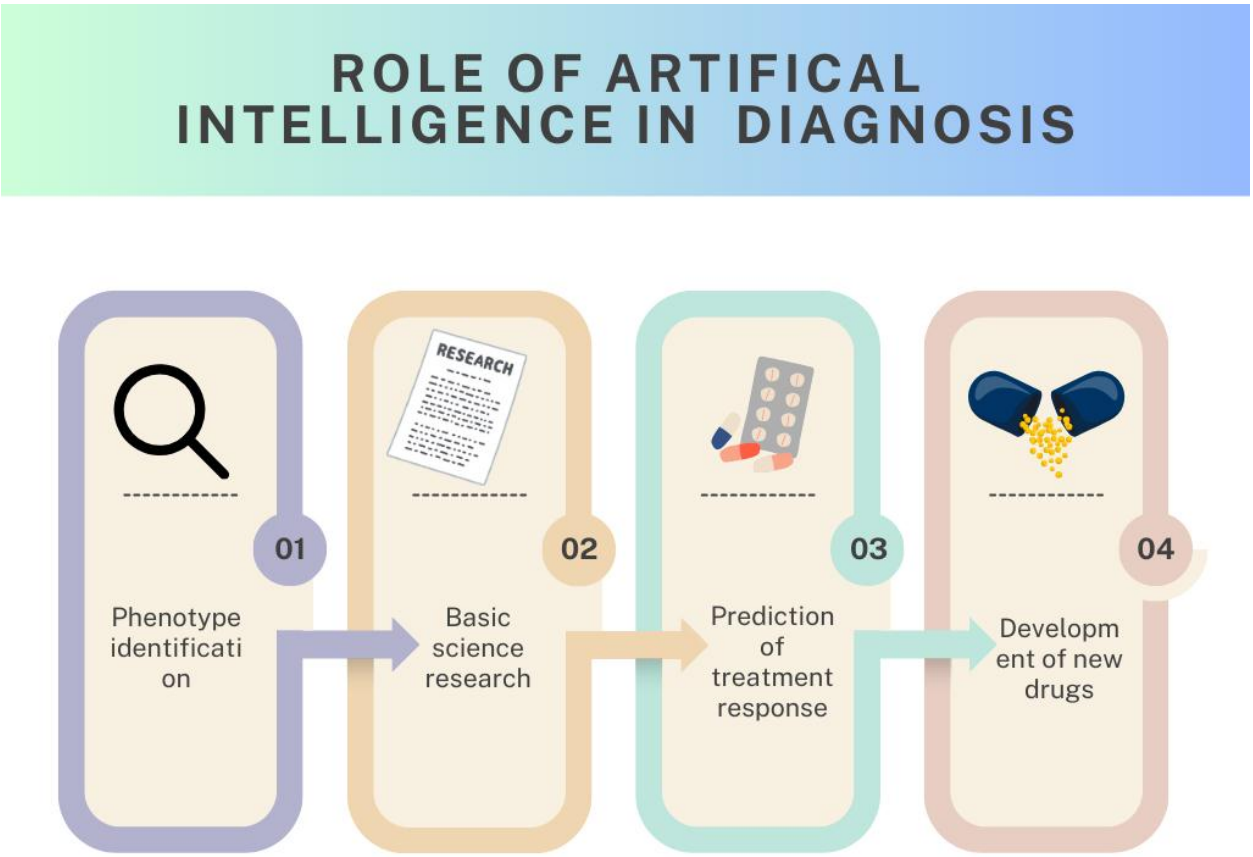

Figure: 2 showing role of AI in diagnosis

AI in Predictive Analytics: AI is also the advance that is helping to eradicate diseases and is also providing an opportunity to make diagnosis at the preliminary stage as the normal diagnosis at this stage cannot be done by anyone except AI. Evidence gathered in the past could help determine

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risks factors applicable to diseases such as diabetes, heart complications and even a stroke. Based on the revealed aspects of abilities, life experience, the background, and health status, AI tools create personal prognosis and assist instar_ the earlier identification of potential risks and suggest further actions [17]. That change from the status of the current and future Healthcare system from a reactive health care to proactive could mean better health, hence less cost in heath cost. For example there is current work being conducted to employ AI in observing chronically ill patient s for instance diabetic or heart patients through data from smart patient and sensors. It may ongoing monitor and document other things like its blood glucose level, pulse rate, blood pressure and others; an alarm is raised if monitored value deviates from a value stored in the system. It made it possible to start some adequate steps that can probably decrease other accompanied forms, admissions and even death rates [18].

AI in Healthcare: Ethics and Applications

Category	Percentage
Data Security & Privacy	20%
Transparency & Explainability	10%
Bias & Fairness	5%
Impact on Jobs	5%
Clinical Decision Support	20%
Predictive Analytics	15%
Remote Monitoring & Telehealth	10%
AI in Surgery	5%
Improving Patient Experience	10%

Figure: 3 showing AI in healthcare ethics and applications

AI in Personalized Treatment: AI is also proving or even revolutionizing how prescribes medical treatments to the patient in the way. If big data accumulates one's gene, health record and life style AI can engage with the persons to offer a right course of treatment. For instance in oncology,

agreed, when you look at the molecular characteristics of the tumor, it is very easy to rally the patents to the right cause the right treatments. This strategy is called precision medicine, and the point is that, of course, better possible in each cases could help a million patients due to possibility of correct treatment. Another aspect which has also been augmented by the use of AI is the makeup of the drugs that reach the market [19]. Search of a drug is traditionally expensive and time-consuming which can be shortened with help of AI as the AI can guess how exact molecular formula will behave inside the human organism or any side effects during a trial phase. Since, larger volume of BIOMED and Chamber data can sound, assistant AI can achieve outcome which can benefit researchers to synthesize new drugs so that lives can be saved in relatively shorter span of time [20].

AI in Robotics and Surgery: Another area of application is more advanced, basically using AI in Robotics to assist in surgeries. For the above stated operations to be done, the surgeons are able to properly use facilities such as the da Vinci Surgical System that is used to do minimally invasive surgeries with higher precision and flexibility. These are sorts of robots that can get real-time data during surgeries or assist in enhancing visual facilities and, incidentally, urinate great manipulations whereupon suturing patients' injuries that, in turn, lead to better patient states and shorter times of patients' healing [21]. AI also helps in surgery by minimizing ISO activities that relates to effort required in carrying out tasks that otherwise takes a lot of time and consequently leave the surgeon with a lot of time when attending to other vital surgery operations. Also, when in robotic surgery, AI is used on areas of hard or no contact with human professional surgical staff. Robotic surgeries that are conducted using telemedicine and they assist to ensure that high quality surgeries are offered to patients who have poor access [22].

AI in Drug Dosing and Optimization: It has also been instrumental in providing doses when administering drugs and all forms of treatments. Understanding of the integrated patient information like the genetic profile, the performance of the last treatment cycle and other aspects enables the application of algorithms in prescribing the appropriate dose of drugs to the affected patients with minimal toxic impacts. Therefore there is enhanced positivism with regards to the outcome in the sense extend of the elimination of the disease or content reduction in side effects

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for the particular patient using the dosing strategy [23]. Diagnostic technical improvement through AI is making it even easier to diagnose diseases as it produces almost no errors, management of diseases that are likely to occur and the kind of treatment that better suits the patient. In future AI technologies are viewed, with a rightful probability, of enhancing the parcel health care offer and the timely provision of health care service and thus bring enhanced health system. Nevertheless it is its strength, has to ensure that the application of tools based on Artificial Intelligence, including primary supervision, meets the highest standards of ethical to guarantee patients' safety as far as relying on the specialized technologies [23].

4. AI Healthcare System Privacy, Security & Data Control

Based on the evaluation of the facets which are related to the application of AI in healthcare environments there are quite a number of benefits which may be accrued by the healthcare environments but there are also questions all of which are generic and pertain to the security of the patient's medical records. P also AI systems are absolutely determined to request extensive from the patient data which include PHI, medical records and genetic information, and lifestyle records [24]. In the creation of models with data, diagnosis, and creation of treatment Algorithms Kr are very central. However, collecting, providing storage and using personal data have conditions that bear relationship with issues of security, privacy and ethical issues [25].

Data Privacy Concerns: In the context of the healthcare sector the patient information is a special data let's, say, where if violated or used for improper goal will produce severe effects. Privacy concerns are most likely most likely to occur if PII is captured, stored or communicated on one or more media platforms because it increases the probability of a data leakage. This data is therefore guaranteed for the cyber criminals, it should therefore be safeguarded through these measures [26]. The process through which the data of the patient is collected should not be out of the patient's control; permission should be sought before feeding his/her information into AI systems. No consensus management assures the patient that their data will not be safeguarded hence they may be put off by applications of artificial intelligent technologies [27]. However, applications within health, wearable's, and tools of telemonitoring aggregating real-time data improve privacy

concern. These tools tend to collect vast amounts of data on behavior patterns and movements of patients and their overall health state, and more to the point, they may not know the specifics on how this data is processed or disseminated. As a result, it becomes important that patients understand how their data is collected and used alongside how AH assists in the analysis of the information as well as the results which are then employed by health care applications [28].

Data Security Challenges: As more healthcare organization employ the AI systems the more data goes through the systems thereby improving the data security dilemma. Inability to deal with money is a good example of identity theft; while unhealthy heath facts may cause patient's lack of trust in AI due to breaches. One of the popular use cases for AI in the health sector primarily relies on sharing data from one organization to another: for example, hospitals, research centers, insurance companies, and drugs companies, and based on it data transfer and storage security. To protect such medical information, measures that need to be taken include client data encryption, two factor identification safe cloud data hosting [29]. Though the key areas of responsibility include follow up security audits, ensuring all staff is trained to protect information and restricting the flow of the same information, a lot more needs to be done to prevent such a mishap. Therefore, there needs to be cybersecurity to address the sort of regulations that are in practice in any healthcare facility like in USA's HIPAA or Europe's GDPR that questions how, who should protect these patient data [30].

Data Management and Interoperability: The third hurdle is Data Management – most of the AI systems applied in the health care context gather and process a great deal of data. Healthcare data is varied and can be structured, unstructured and semi-structured or in different formats that can be stored in different heterogeneous systems, which present significant challenges in integration into AI a for example, Electronic Health Records (EHRs) which are stored in several formats in learning institutions to create compatibility issues [31]. AI assumes large amounts of large, high-quality, standardized measurement data for its operation but fails with data in different formats or with missing data. The first is one or many stabilized and guaranteed inputs while the second is the ability to contain one or many from which data will be fed to an AI system [32]. Integration of the several healthcare information technology as well as other health care data systems are also

crucial in that the provision of health care becomes efficient. From these challenges, the following recommendations. These problems should be solved; more attention should be paid at the same – to the standardization of the formats of the supplied data, and at the same to the creation of the single storage of the data. For instance, HL7, which participates in the question of standards for transferring medical data from one country to another and, consequently, in the regulation of doctors' communication with AI-based cloud services [33].

Ethical Use and Ownership of Data: Yet, privacy and security are not the only concerns there is an issue of proper use of the healthcare data that would be a concern also. And as is evident once one has embarked on the process of collecting such data, to whom does such data belong, or in other words who owns such data? This is a big factor in the artificial intelligence kind of work where the patient's data is utilized to train the AI or in the development of the new therapies [34]. The use of health information in relation to Intellectual Property Rights and Ethical Use is a huge factor and hence there should be a clear set of guidelines on the right use of data. Further, the research intelligence systems created for patients' information should consider patent's right to privacy to ensure that the individual patient who is under the research is not exposed [35].

Transparency and Consent: Thus, for the AI to be trusted by patients to a certain degree, specific openness regarding the patient's data processing and utilization is mandatory. A patient should know what data is being obtained, what is going to be done with the data, and why it is being done. Not only can it place the control with the patient, but it also helps to regulate the usage of AI systems to some extent. For equal consideration, the implementation of the consent management platforms that enable the patients to switch ON/OFF for data usage for any purpose are the main mechanisms that can enable healthcare organizations for respecting self- determinations of the patient along with several ethical frameworks [36]. Since the growth of the AI technology in healthcare sector is promising, governing the privacy, security, and data right and effectively is the precondition for turning these technologies to a right direction. For this reason, the healthcare providers can be in a position to use the best data protection measures, use data and the law of the matter with high level of integrity to discharge their duty in letter and spirit – this will go a long way in ensuring patient cooperation thereby the advancement of AI in health care services [37].

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5. Other policy implications for AI in Health and Potential Future Directions to the Concern

However, I can predict that that based on the current trend and depending on the development of the new technologies, the legislative acts and people's perception about AI it will more important in the future of healthcare. It suffices noting that practically any aspect of the healthcare practices can benefit from the application of artificial intelligence, however, ensuring that the introduction of AI is sensible and right, it requires policy regulation, definition of the ethical norms, as well as the guidelines on functioning of such systems [38]. The last section of the blog reviews the AI potential of future development in the healthcare sector alongside relevant public policies that will shape the future of AI.

Emerging Trends in AI Healthcare Technology: Other attribute that, most likely, will evolve in the future for providing better healthcare is the future development of accurate medication model through the assistance of ABS technologies. AI will progressively expand the possibility of using many types of data from genomics, wearable devices, the environment, etc; thereby further improving the personalization of the healthcare experience for the patient. For instance, it will lead to better ability of deciding on susceptibilities to diseases to prevent them before they happen, because AI shall increase the accuracy of biochemical evaluation of a person's genes [39]. AI contribution to drug discovery and even more to the therapy addressable to the individual patient's requirements will also grow furthermore. The current AI approaches are employed to predict the outcomes of the specific treatment; however, future more enhanced AI solutions can provide more extended description of treatment impacts within the real-time mode to optimize the therapy selection continually [40].

These AI systems will allow doctors the option to change according to the continuity of input data, which will smooth out the FW medical environment. Besides, the increasing importance of AI seems to have promoted improved importance towards the efficiency of the administration of healthcare services. It might run the gamut from mundane things like agenda and accounts management to clinical decision support systems that have sophisticated capabilities to reducing

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costs and managing mountains of information [41]. Another healthcare choices could also be available with reference to Part through telemedicine based upon in AI to boost up the density of the care provision cover in different areas of the country and the proposing the remote consultation and diagnosing and thus making the health care services easily available [42].

Policy and Regulatory Considerations: Because of the increased flow of current, the health care sector has embraced AI hence proper policies should be instituted in solving problems. Of them, probably the most significant one will be the need to solve the problem related to the protection of data. Super imprytniezione depends largely on AI = for this reason the rules governing collection, storage and sharing of personal health information must also change [43]. Likely both in the EU's General Data Protection Regulation (GDPR) and in America's Health Insurance Portability and Accountability Act (HIPAA) would probably have to be revised to improve to incorporate the distinctly unique issues of use of AI in sharing patient's data across different interfaces and with third-party AI. However, an increasing adoption of AI in healthcare decision supports prompt questions concerning responsibility and compliance with those decisions [44]. What happens if AI sys-teams are wrong, or when there is an adverse impact? If there are any mistakes or impacts, there will be a need to assign accountability for some of those observations, to the developers, to the deploying healthcare care organizations or even the technology itself. The legal prescriptions in the framework of AI technologies applications in health care systems that determine the degree of HCI responsibility of health care organizations are urgently needed to protect the patient as well as the health care professional's interests as well as to encourage the appropriate use of the abovementioned technologies [45].

Addressing Bias and Equity in AI Healthcare Systems: This is because of what AI receives input from past data; therefore, AI may be useful in solidifying established booking bias in healthcare. It entails that to its extent one might be prejudiced based on one's race color, or origin, gender, the class one comes from, or the geographical area one comes from means that there are some members in the society who would be receiving favorable treatment as compared to the other. Consequently, one of the most significant policy implications of the future will be the further augmentation of the separate learning set differentiation. This is paramount so as to enable us to

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prevent circumstances where AI will only exist to magnify healthcare disparity in particular group of people while helping other people to build on the health care access [46]. However, these policies should be transparent to explain ability in the Artificial Intelligence systems. Continued and future emphasis will be on creating more interpretable models that are more easily understood by other clinicians and patients as the reliance on the AI learns grows. AI technologies have to behave in a manner that the clinician comprehends the data that are being analyzed and should have confidence in the recommendations made. Market regulatory authorities will need to determine what transparency standards must be put in place and facilitate collaboration between all industries in developing the guidelines for XAI [47].

Workforce Implications and Training: The subject of workforce is also going to carry a great significance and change in the health care services with the integration of AI systems. Even though several ordinary motions could be delegated to AI it would not be ready to do away with health care professionals. Instead, it is proposed to enhance these agents with an extra way to fulfill more primary functions, thereby freeing the healthcare provider's time to dedicate on higher order decisions and patient care. However, this shall call for training and education of healthcare worker on an on-going basis to help them engage with the existing AI [48]. Future generations of practicing health care providers will require curricula that makes it easy for them to combine clinical educational knowledge with technical AI systems knowledge. Heath care professional lunch and learns that ready them to engage and gain trust in order to work with AI will be needed. In addition, there could be spiking demand for professionals in the healthcare industry predominantly to care for the AI systems [49].

Global Collaboration and Ethical Frameworks: But as AI is gradually identifying its place and roles in the modern health care systems all across the globe, the cooperation in the international level will become inevitable. It will thus be important for healthcare organizations, governments and research institutions to develop the ethical standards and polices that can be work-able cross-nationally. This is going to be far more profound in the manner in which the utilization of AI will be made to the degree to which it will improve the health care accessibility to both the low and middle income patients in relation to resource constraint. Ethical shall have a strategic function in

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this joint global venture [50]. When transferring healthcare to the AI, it is necessary to evaluate AI processes by indicating their compliance with the principles, such as beneficence, respect for patient's autonomy, and justice. In this regard formulation of the global ethical principles of AI will ensures the benefits that accrue through AI application in the health sector will also accord with the societal utility on the one hand and ensure the rights of individuals using the application are protected [51].

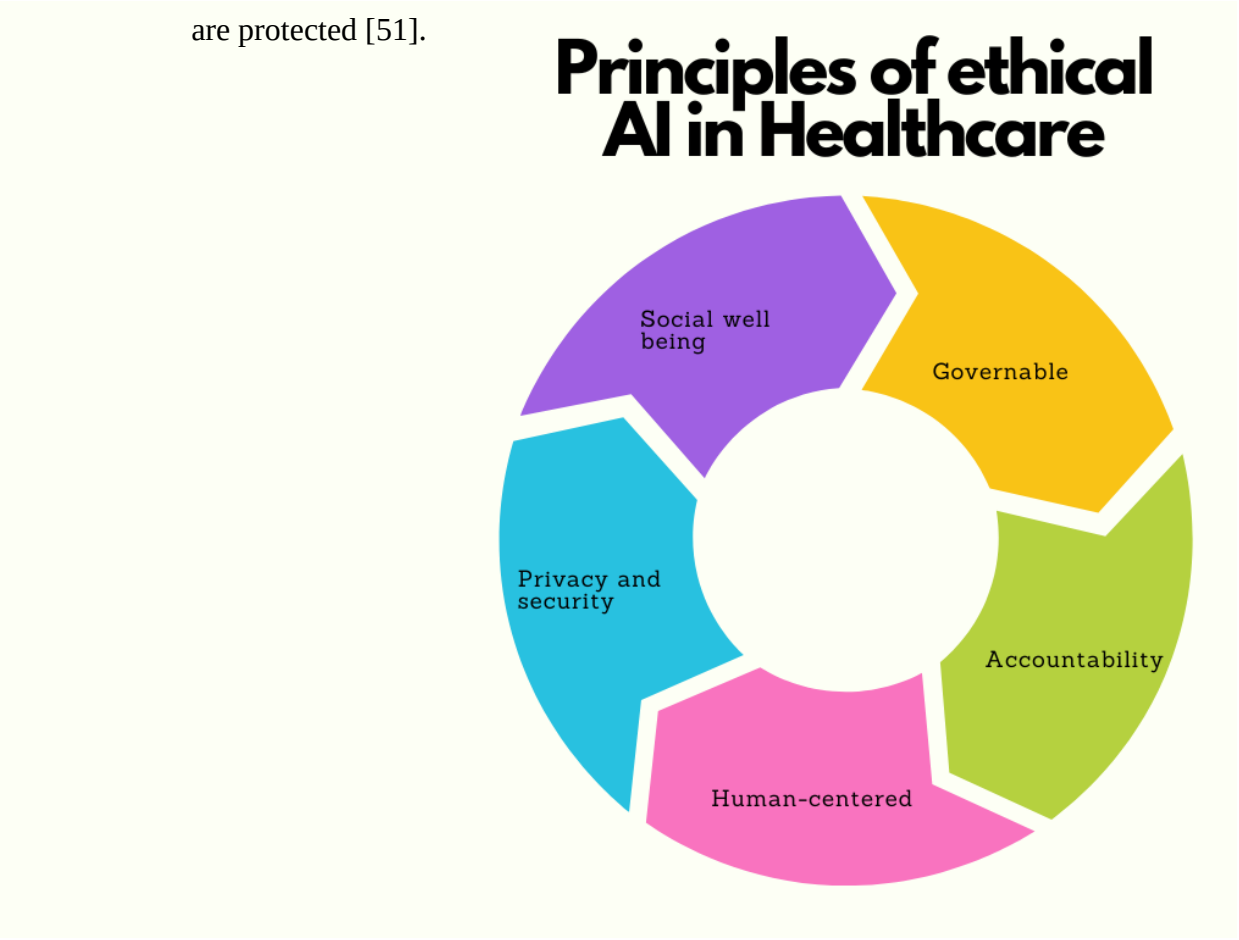

Figure: 4 showing principles of ethical AI in healthcare

However, it is undeniable that this particular AI technology has the potential of being innovative in diagnosis, disease treatment and even patient care in the future…this will come to pass if only efforts can be made in policy and regulations to enhance privacy, security, bias and transparency as well as workforce for AI technology. They can then be utilized by stakeholders in constructing a healthcare system with AI technologies, if this will be capable of delivering improved therapy

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performances, lesser difference and metamorphose fairly [52]. AI is still developing thus care should be taken in adopting this technology in healthcare while at the same time leveraging on the advancement of this technology to enhance equal access to health care in the world.

6. Conclusion

AI in the meantime is critical for the modern trends of the healthcare system workings, diagnosing, treating, caring for patients, and improving the overall healthcare system. However, this transition has not been accompanied by Ethics, Practical, and Regulation issues that need to be solved efficiently. Challenges such as responsibility, unfair, openness and data confidentiality appear and implement, as AI is more advancing its spheres of application in the healthcare systems. With the extension of AI, it is required to set the right framework initially and then CO construct resolved rules for ethical uses of AI for the benefit of human health care. In so far as the technical value of the application of AI, it was most beneficial in enhancing diagnosis, analytic forecasting, and customized treatments. AI has proved useful due to its utilization of voluminous data in early identification of diseases, tailoring of treatment and also surgery. The current innovations do not only raise the quality of the care offered and even lower the costs of services and make health-care more accessible, especially to those parts of the world that actively require it. However, with the progression of AI being integrated into healthcare the topics like data ownership and protection, data security, data categorization will need to be discussed more. Privacy of health information and equal attention to healthcare will be helpful in increasing needed artificial intelligence applications in the field of healthcare.

Referring to the work of Kubiak et al., cited above, to consider further developments of AI in health care one has to state the following: It will be interesting to carry out further, more detailed, work on the following topics: Precision Medicine AI assisted drug discovery; Robotic surgery, and many others. However, depending on the rules or regulation that hinder or reduce the infringement on the privacy, deception and A.I bias, the ai will be inserted. Policies also have to remember how they are going to affect the healthcare workforce regarding education for the interaction with these technologies, and most importantly, whether AI can enhance the human factors in this workforce

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rather than supplant it. Last of all, artificial intelligence shall continue to be anchored on principles and patient oriented-values for health besides polices on fairness and inclusion whereby the advancement of the AI will determine the future of health care. Through the unification of the major global aspects of the system, the world can ensure that AI solutions will only serve to augment the positive development of a healthier society in virtually all aspects of human endeavor. When used properly the AI concept will enhance better light on much desired more efficient delivery of healthcare services for the benefit of both patients and providers to attain a future that will merge the best of human and digital way.

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