ARTIFICIAL INTELLIGENCE IN HEALTH CARE

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Artificial Intelligence in Health Care

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INTRODUCTION

Reddy, S., Fox, J., & Purohit, M. P. (2019). Artificial intelligence is an upcoming field in computer science and engineering which refers to way through which a machine can easily do a tasks which generally require human intervention and human intelligence .Basically a way through which a machine can think on its own to perform a task. Through artificial intelligence machine can execute any complex or simple task with greater efficiency and greater speed than humans would do. Now many researchers believe that artificial intelligence can be next digital revolution in this world.

MailMyStatements (Nov 15, 2018) and Rita Sharma, with advancement in technology and science many things have become boon to society and many things are becoming harmful. As many hospitals are now maintaining the patient medical records online they are becoming more prone to cyber theft. So one of the major problems faced by healthcare industry is cyber security .Patients medical records are breached which is very precious for their health. When data breach occurs not only patient confidential information is at risk but also patient's privacy is also violated. Beside cyber security lack of price transparency is a major problem faced by healthcare industry. Many patients are now prior research about the facilities and pricing offered by the healthcare department. Due to this any official department not making their pricing public will not be in the attention of the patient. Another problem faced by the healthcare organization is patient experience. Healthcare industry is now facing problem of retaining and attracting customers with great facilities and low cost. The amount of workload a healthcare official has to carry is so exhausting at an extent that they have to compromise their personal life to fulfill their duty. Increase in the price of pharmaceutical drug has created a major problem for healthcare enterprise and patients .

Davenport, T., & Kalakota, R. (2019). With the help of artificial intelligence and further advancement in technology treatment and diagnosis of diseases will be much easier and cost effective. Many tech startups are using artificial intelligence to detect a diseases well before it becomes critical so that it could be easily cured in advance .Many firms are working on the diagnosis of deadly disease such as cancer well before in advance through machine learning and artificial intelligence. To improve patient health fast a hospital develops a clinical plan for the patient so that patient recovers fast , but sometime the clinical plans do not go as planned in such cases artificial intelligence will be very helpful as a better plan would be

executed through machine learning. Administrative work will also be made easier through artificial intelligence. All the payment transaction will be easily managed. Patients mental health and physical condition will easily be diagnosed through artificial intelligence. Whether a particular drug given to a patient is helping the patient to fight the disease will easily able to achieve through machine learning and artificial intelligence.

LITERARY SURVEY:

- Will artificial intelligence solve the human resource crisis in healthcare

Meskó, et al. (2018). There is a huge crises of healthcare workforce because of doctors shortage worldwide,aging and burnout physicians and more demand for chronic health care.there is over 17 million shortage of healthcare workers globally in addition to aging workforce.becuse of increasing number of patients and shortage of physicians ,we can see sleep disorder and burnout of healthcare workers can be seen these problems and gaps in society can be solved by the use of technology and artificial intelligence very easily. Artificial intelligence could help in diagnoses of disease much faster than a doctor ,it can also facilitates in administration work thus reducing work for the staff . Deep Genomics could help in identify linkages to diseases in sets of genetic information and medical record. Supercomputers could help in finding new ways a disease could be cured and help in clinical trials . AI could be used in reducing viruses infectivity in less than a research of a day instead of years .technology will not only reduce the cost of care but also making it faster, efficient and solve workforce crises in healthcare .

- Ways artificial intelligence will transform primary care

Lin, S. Y., Mahoney, M. R., et al.(2019). As the we moves away from fee-for-service to value-based payments, the of the population of health management industry is expected to increase many companies are exploring the role of AI to improve their ability to identify, and to optimize their performance by using population health tools for physicians. Many companies are developing Artificial Intelligence doctors that will provide health advice directly to patients with common thus reducing workload for more complex care. With increase in technology many people are wearing devices that detects early signs of a disease physicians may be able to use data from such devices to treat disease at earlier stages. AI-powered machines are diagnosing disease with greater precession than physicians in curing skin cancer,[3] breast cancer colorectal cancer, brain cancer,[3] and cardiac arrhythmias. These tools in the hands of primary care doctors can provide significant benefit to patients. Artificial intelligence can be used to automate some primary care with more efficient and greater speed for patients and physicians.

- Artificial intelligence in neurosciences: A clinician's perspective.

Ganapathy , K., Abdul, S. S ,et al. (2018). Human brain is very complex to understand and perform surgeries. human brain is very diligent part of our body so while surgeries human error may occur Application of AI in neurosciences will help us to understand the intelligent functioning of the brain. AI aims to mimic human cognitive functions.AI can help doctors to remain up to date by providing recent research about certain diseases and helping them to provide better care to their patients. AI outperformed many doctors in predicting the opera-

tive findings. Patients suffering from mental health issues can be helped by using AI,it may also reduce risk of suicide. Machine learning algorithms could help in medication therapies and curing for many mental Diseases. Accurate prediction of tremor can be achieved by using machine learning but prediction accuracy is dependent on the quality of the clinical measurements. AI will be adopted in neurological treatments only when there is evidence that AI leads to better outcomes, efficiency and reduces costs. Hopefully, the AI enabled clinician will now spend more time with his patient for the well being of patient mentally rather than struggling with the data.

- Artificial intelligence in thoracic surgery: past, present, perspective and limits

Etienne, H., Hamdi, S., (2020) et al. Thoracic surgeries are showing great improvement by recent advances in AI technologies . Improvements in fields such as radiology, pathology or respiratory medicine have helped surgeons to treat patient effectively. In the field of radiology with the help of deep learning major developments have been occuring.It helps to detect the pulmonary nodules on chest radiographs. Algorithm based system outperformed many surgeons in radiograph classification and nodule detection performance .these . The robot is a tool set to mimic surgeons' capabilities and is not to be used as a replacement for surgeon. The surgeon will have control of the robot's every move; the system mimics the surgeon's hand movements in real time. By using robots we surgeries can performed with great precision and efficiency. These development have not only helped patients but also helped surgeons. AI technologies could improve clinical practice and efficiency of the surgeons.

- Artificial Intelligence in Cardiac Management

Nadikattu, R. R. (2017). Cardiac disease is considered to be one of the leading causes of death across the globe. so there has been an ongoing demand to create a new way to treat cardiac diseases and AI has created an enormous impact in healthcare industry by diagnoses and treatment of diseases. due to unhealthy lifestyle blood gets cloth in artery which increases heart risk even in children. AI records the patient’s response to the questions of doctors to determine the problems and symptoms.AI will make easier for doctors to analyze the patient and determine which patient require extra care and treatment. high risk patient will have much more chances of survival . AI can also provide a multi-monitoring feature through it will be easier for doctors to monitor more than one person at a time. cardiologists with the use of artificial intelligence and machine learning can make decisions based on data and new researches in that area to treat patient effectively. It also helps the person by cutting down the price by providing better treatment at same time. Integration of technology in medical field is helping to cure people with less price and more effective so that no one dies due to lack of facilities.

- How artificial intelligence is changing nursing.

Robert, N. (2019).Artificial intelligence has introduced new algorithms and ways into nursing and medical practice. As new algorithms are integrated in system to help nurses to take care of patient .It will be very important for nurses to gain enough knowledge in interpreting multiple data results and integrating new information into nursing practice. Now some robots are designed in such a way they can emotionally respond to circumstances and provide mental support to patients. As robots will learn to perform nursing activities, such as ambulation support, vital signs measurement, medication administration, and infectious disease protocols, the role of nurses in healthcare industry will change. Nurses with robot will have the

enough time and spend more of it with patients. And to support them mentally. Technology will change how nurses perform their tasks, but the need for nurses will remain same . Integrating AI and technology in medical field will help the patients for better care and treatment.

ADVANTAGES:

- High expensive surgeries will be replaced by robot governed surgeries which will not only be cost effective but will also be beneficial to patient treatment.
- AI will help in management in hospital records which is a tedious work but with the help of AI it will fast and efficient.
- Diagnosis of diseases will be more efficient and earlier than a doctor which will help in fast treatment.
- With real time data, clinical decision making will be much easier with help of artificial intelligence.
- Specific patient data can easily be track with the help of AI which will help in treatment.
- AI will reduce human work and helps them to concentrate in more productive work like taking care of patient mental health which is very important.
- All the administrative work accounts for 30% healthcare cost with the help of AI administrative work will done much more faster and effectively thus saving money.
- AI used in wearable healthcare devices will allow to detect problems more faster than conventional process.
- With use of AI healthcare cost will be reduced thus making basic health facilities available to all.
- Time needed for diagnosis and treatment will be reduced with use of artificial intelligence.

CONCLUSION:

Artificial intelligence will be very useful for a country like India where healthcare facilities are not affordable to all and are a luxury for some people. With use of AI cost deduction in basic healthcare facilities will be implemented and everyone will be able to afford necessary facilities in their life. With increase in communicable, non communicable diseases and new virus infection being spread AI will be of greater use to the people as it will detect diseases much faster and cure patient's life much more effectively. Increase in population is creating a lot of burden to our healthcare staff due to which healthcare staff is not getting proper sleep and are being exhausted mentally due to which their efficiency is decreasing in patient care and treatment, with use of AI smart robots will be able to assist our healthcare staff providing much more efficiency in patient care and treatment, it will also be reducing burden on healthcare staff. Thus with use of AI more patients will be treated which will help in reduce the demand and supply gap present in our country. Common men and women will be able to detect small diseases on their own with the help if AI powered smart watches and band, it will not only save their time which they spent on going to a hospital but also save their money. The potential for artificial intelligence is enormous and will keep on growing every year with new innovations in the society and providing great help to human mankind.

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