ANALYSIS FOR HOSPITALS HEALTH-CARE DATA

INTRODUCTION:

The healthcare costs have been constantly rising, the quality of care provided to the patients in the many states have not seen considerable improvements. Recently, several researchers have conducted studies which showed that by incorporating the current healthcare technologies, they are able to reduce mortality rates, healthcare costs and medical complications at various hospitals.

The recent advances in information technology have led to an increasing ease in the ability to collect various forms of healthcare data. Data analytics, in particular, forms a critical component of these computing technologies.

Title: Data analytics in healthcare: Management, Analysis and Future prospects. J Big Data Volume - 6, 19th June 2019.

Healthcare is a multi-dimensional system established with the sole aim for the prevention, diagnosis, and treatment of health-related issues or impairments in human beings. The combined pool of data from healthcare organizations and biomedical researchers has resulted in a better outlook, determination, and treatment of various diseases. This has also helped in building a better and healthier personalized healthcare framework. Modern healthcare fraternity has realized the potential of big data and therefore, have implemented big data analytics in healthcare and clinical practices.

Algorithm: Artificial intelligence (AI) algorithm, Novel fusion algorithm.

Advantages: The analyses investigate methods of improving the provision of clinical care, enhancing disease prevention, and measuring the effectiveness of various treatment options.

Disadvantages: One of the major drawbacks in the application of big data in healthcare industry is the issue of **lack of privacy.**

Title: Electronic Health Records in Chiropractic Practice: Common Challenges and Solutions, Journal of Chiropractic Humanities, Volume 24, Issue 1, 5th 2017, ISSN 1556-3499.

The purpose of this study was to review the literature on current challenges and propose solutions for the optimal utilization of the electronic health records (EHRs) in chiropractic practice.

Algorithm: Semi-Supervised Machine Learning

Advantage: Medical and office staff no longer has to waste time sorting through cumbersome paper records. Users can access electronic health records quickly and efficiently with just a few strokes on a keyboard.

Disadvantage: As with just about every computer network these days, EHR systems are vulnerable to hacking, which means sensitive patient data could fall into the wrong hands.

Title: Big data analytics for drug discovery,IEEE International Conference on Bioinformatics and Biomedicine, September 2013.

Drug discovery is related to big data analytics as the process may require the collection, processing and analysis of extremely large volume of structured and unstructured biomedical data stemming from a wide range of experiments and surveys collected by hospitals, laboratories, pharmaceutical companies or even social media. These data may include sequencing and gene expression data, drug data including molecular data, protein and drug interaction data, clinical trial and electronic patient record data, patient behaviour and self-reporting data in social media, regulatory monitoring data, and literatures where trends and drug repurposing and protein-protein interaction data may be found.

Algorithms: K- means clustering

Advantage: The use of healthcare databases in the evaluation of medical products has become very popular in recent years.

Disadvantage: A drawback of clinical trials is that they are highly controlled and highly monitored to ensure strict adherence to protocol; however, that's not how people take drugs in the real world.

Title: Systematic review of clinical prediction models to support the diagnosis of asthma in primary care. NPJ primary care respiratory medicine vol. 29. 9th May 2019

Diagnosing asthma is challenging. Misdiagnosis can lead to untreated symptoms, incorrect treatment and avoidable deaths. The best combination of clinical features and tests to achieve a diagnosis of asthma is unclear. As asthma is usually diagnosed in non-specialist settings, a clinical prediction model to aid the assessment of the probability of asthma in primary care may improve diagnostic accuracy. We aimed to identify and describe existing prediction models to support the diagnosis of asthma in children and adults in primary care.

Algorithm: KNN algorithm

Advantage: A validated clinical prediction model for asthma diagnosis could help healthcare professionals improve the accuracy of a diagnosis by guiding decision-making and reducing variability between clinicians.

Disadvantage: Variables used in the clinical prediction model were not clearly reported, or unavailable in routine clinical practice.

References:

[1] Data analytics in healthcare: management, analysis and future prospects. 19th June 2019.

https://journalofbigdata.springeropen.com/articles/10.1186/s40537-019-0217-0#citeas

[2] Electronic Health Records in Chiropractic Practice: Common Challenges and Solutions, Journal of Chiropractic Humanities, Volume 24, Issue 1, 5th December 2017.

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[4] Systematic review of clinical prediction models to support the diagnosis of asthma in primary care. NPJ primary care respiratory medicine, Vol. 29,9th May 2019.

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