PROSPECTS AND CHALLENGES OF USING BIG DATA IN HEALTHCARE SECTOR OF BANGLADESH: FOCUS ON THE REFORMATION OF THE HEALTHCARE SYSTEM

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ABSTRACT

The health care industry truly has created expansive measures of information, driven by record keeping, consistency and administrative prerequisites, and patient care. Big Data has taken the world by a variable tempest, touching each division from healthcare to promoting in heap distinctive ways, enhancing productivity, adding to process effectiveness, and making a situation where advancements flourish and thrive. The hospitals in Bangladesh which for all intents and purposes sit on the vast amount of data of their patients are yet to devise a strategy in utilizing those data genuinely to give their patients a superior service. Big data analytics in Bangladeshi healthcare sector can be developed into a promising field for providing knowledge from extensive data sets and enhancing the outcome of the results while decreasing expenses. Its potential is great; be that as it may, there remain difficulties to overcome. Therefore, the study of this paper aims to describe the prospects and challenges of big data analytics in Bangladeshi healthcare sector. The study of this paper is based on

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secondary sources where a qualitative research is conducted to analyse the social and economic issues relating to the Bangladeshi healthcare system using Big data. In sum, this paper gives a broad overview of big data analytics for the healthcare researchers and the practitioners.

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INTRODUCTION

The health care industry truly has created expansive measures of information, driven by record keeping, consistency and administrative prerequisites, and patient care. The most recent decade has seen real advances in the measure of data that is routinely generated and gathered in almost everything including human capacity to comprehend, examine and utilize technology. These patterns have together brought about the development of the field of 'Big Data'

What's more, in the brief span since its commencement, Big Data has taken the world by a variable tempest, touching each division from healthcare to promoting in heap distinctive ways, enhancing productivity, adding to process effectiveness, and making a situation where advancements flourish and thrive.

Right now according to the International Monetary Fund, the 57th biggest economy on the planet, Bangladesh has been making huge financial advancement as of late. However, in spite of enhancing social insurance pointers, for example, decrease in death rates and increment in normal future, the wellbeing division of the nation is yet to achieve its maximum capacity. Indeed, Bangladesh is one of the ten nations with most minimal health consumption. Be that as it may, change arrangements combines with development and venture by the private area may convert into the quick ascent of this part.

This exploration paper means to manage the principal opportunities and difficulties of the big data and its examination in Bangladeshi healthcare. The study of this paper is based on secondary sources where a qualitative research is conducted to analyse the social and economic issues relating to the Bangladeshi healthcare system using Big data. It likewise examines the current technology platform and apparatuses that can use huge data adequately. The paper provides a brief presentation about Big data and its sources while discussing the importance of big data analytics. The study also identifies the diverse attributes of Big Data between Business Sector and Medical Sector. Consequently, the study explores the potentials of big data in Bangladesh and analyse Bangladeshi

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healthcare sector in order to understand the challenges for implementations of such datas.

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BACKGROUND OF BIG DATA AND ITS SOURCES

Big data is a term that is utilized to depict vast volume of data. Data may in the type of unstructured or structured. The analytics of Big data prompts any association towards better basic leadership and key advances. Giant companies in divisions like retail, manufacture and government offices are utilizing Big data to meet their business and vital destinations. Big data analytics likewise assumes an indispensable part for small or medium size enterprises to underwrite their business. Industry analyst Doug Laney initially begat the idea of Big data while alluding to the test of data management (Laney, 2001). As indicated by that, there are four essential dimensions of Big data idea delineated below (Hitzler & Janowicz, 2013).

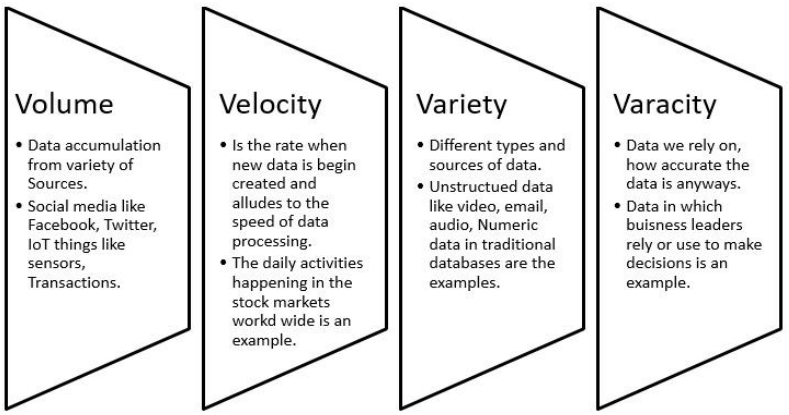

Figure 1: Four V's of Big data

Today, numerous associations are assembling, putting away, and analyzing immense measures of data. These data are referred to as a Big data as it has Volume, Velocity and Variety and Veracity. Gartner predicts that by 2015 the need to help enormous data will make 4.4 million IT occupations all around, with 1.9 million of them in the U.S (Pettey, 2012). Many areas are profited from the Big Data analytics like The Automotive Industry, Supply Chain, Logistics, and Industrial Engineering, Retail,

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Healthcare sector, Financial Services Industry, Entertainment and so forth. Joining Big Data with Analytics prompts any association towards many assignments like deciding main drivers of breakdown, issues, and deformities in close ongoing, creating coupons based on the client's purchasing propensities at the purpose of the offer, recalculating whole risk portfolios in minutes, recognizing fake conduct before it influences your association and so on.

IMPORTANCE OF BIG DATA AND BIG DATA ANALYTICS

Most tools intended for data mining or statistical analysis have a tendency to be improved for extensive data sets. Indeed, the general rule is that the bigger the data sample, the more exact are the measurements and different results of the analysis. Rather than utilizing mining and statistical tools, numerous users produce or hand-code complex SQL, which parses enormous data looking for simply the correct client fragment, stir profile, or extreme operational cost. The newest age of data visualization tools and in-database investigative capacities moreover work on big data.

Big data can likewise execute big queries and parse tables in record time. Late ages of vendor devices and stages have lifted us onto another level of execution that is extremely convincing for applications including big data. This is because of a steep drop in the cost of data stockpiling and handling data transfer capacity. The way that tools and stages for data analytics are generally moderate is huge on the grounds that big data isn't only for huge business it’s for other sectors like healthcare as well. Some little to-fair size organizations (particularly those profound into digital procedures for deals, sales, client connections, or supply chain) additionally need to oversee and use big data.

Most present-day instruments and procedures for cutting edge examination and big data are exceptionally tolerant of raw source data, with its value-based pattern, non-standard data, and low-quality information. That is something good, on the grounds that revelation and predictive analysis rely upon loads of points of interest—even questionable information. For instance, analytics applications for misrepresentation detection frequently rely upon exceptions and non-standard information as signs of fraud. In this way, if we apply ETL and data quality procedures to big data as we improve the situation an information distribution center, we risk stripping out the very chunks that make big data a fortune trove for cutting edge analytics (Russom, 2011).

The new advancements and new prescribed practices are captivating, notwithstanding entrancing, and there's a sure audacity to working with many terabytes. Be that as it may, we don't do it for the innovation rather big data and discovery analytics together for the new bits of knowledge they give to the business.

The retreat has quickened the as of now animating pace of business. The recuperation, however welcome, brings significantly more change. Indeed, the normal business has changed past all acknowledgment as a result of the current financial retreat and recuperation. The change has not gone unnoticed. Businessmen now share a discount acknowledgment that they should investigate change just to comprehend the new condition of the business.

BIG DATA AND HEALTHCARE SECTOR

Information and communication technology (ICT) is assuming an indispensable part of enhancing healthcare for people and communities. It enhances wellbeing framework efficiencies and avoids medicinal blunders. With an image of new and productive instruments for storing and getting to data, ICT serves a society better. ICT controlled wellbeing components are frequently known as eHealth.

The healthcare sector develops quickly in most recent 30 years. The healthcare industry verifiably has produced a lot of information, driven by consistency, administrative prerequisites and patient care. While most data is put away in printed version shape, the present pattern is towards the fast digitization of this large amount of data. There are distinctive sorts of data sources which create these colossal measures of data. Big data in healthcare alludes to electronic healthcare records (EHR) that are very extensive and complex that they are hard to make do with conventional programming or hardware. Likewise, they are not effectively made do with customary or regular data management tools or strategies. Utilizing the advancements that ready to manage such "Big Data" will offer numerous potential chances to the healthcare sector.

One of the trademark that healthcare sector has is its information richness. With the improvement in diagnostic and treatment, healthcare sector developed so rapidly in the most recent couple of decades. There are many sources in this part from where the data is created. These information are without a doubt as Big Data. The data originated from many sources and arranged as follows:

1. Web data and social media data: Information captured on Facebook, Twitter, LinkedIn, Instagram, Youtube websites, and so forth. It can likewise incorporate healthcare sites, cell phone applications and so on (Raghupathi & Raghupathi, 2014).
2. Machine-to-machine (M2M) device generated data: readings from remote sensors, meters, and other devices (Bradley, 2013).
3. Biometric data: Information may in the type of retinal scams, x-ray pictures, fingerprints, hereditary qualities, other therapeutic images, circulatory strain and other comparable sorts of data (Raghupathi & Raghupathi, 2014).

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4. Human-generated data: As unstructured and semi-structured data. A portion of the examples are EMRs, Doctor's notes and paper archives (Raghupathi & Raghupathi, 2014).
5.Genomic Data: data in the form of DNA sequence (Patel & Patel, 2016).

DIVERSE ATTRIBUTES OF BIG DATA BETWEEN BUSINESS SECTOR AND MEDICAL SECTOR

Many counseling firms (e.g., IBM, SAS) have effectively encountered a time of advance in digitizing medical records, as pharmaceutical organizations and different associations have totaled a very long time of research and development work data in electronic databases. Specifically, numerous administrations, governments, and other open healthcare services stakeholders have quickened the advance toward straightforwardness by making many years of stored data usable, accessible, and significant by the healthcare sector also.

Nonetheless, as we took a gander at the viable utilization of enormous data in the social healthcare sector, we found that healthcare services big data has diverse traits and qualities and stances distinctive difficulties contrasted with the business sector. The genuine distinction of healthcare services data is its scale and extension, which have been developing consistently for quite a long time. Healthcare services big data can be characterized utilizing storehouse, security, and assortment. Every government organization, or division, or healthcare stakeholders regularly has its own particular distribution center (an alleged "storehouse") of secret or public medicinal services related data. Security, the essential property of enormous data for governments or healthcare stakeholders, depicts the additional care required in utilizing healthcare data where security, protection, authority, and authenticity issues are concerned. The trait of 'variety' of social insurance information, with respect to business associations, alludes to the presence of data in all structures: structured, semi-structured, and unstructured. Nonetheless, healthcare data have one fundamental contrast from business data, i.e., the greater part of healthcare data are organized (e.g., Electronic Health Records) instead of semi-structured or unstructured.

In spite of the fact that the reason for big data administration is comparable, a superior comprehension of the problems, the qualities looked for, and the difficulties included vary significantly between business firms and healthcare organizations. Business firms utilize enormous data to manage clients' needs and behavior patterns, develop one of a kind core competencies, and make innovative items or services, though governments and healthcare stakeholders utilize big data and predictive analysis to scan for sustainable answers for such issues as tracking public healthcare, deciding and actualizing suitable treatment ways for patients, supporting clinical enhancements, checking the safety of healthcare services frameworks, guaranteeing administrative control, and advancing health system framework responsibility.

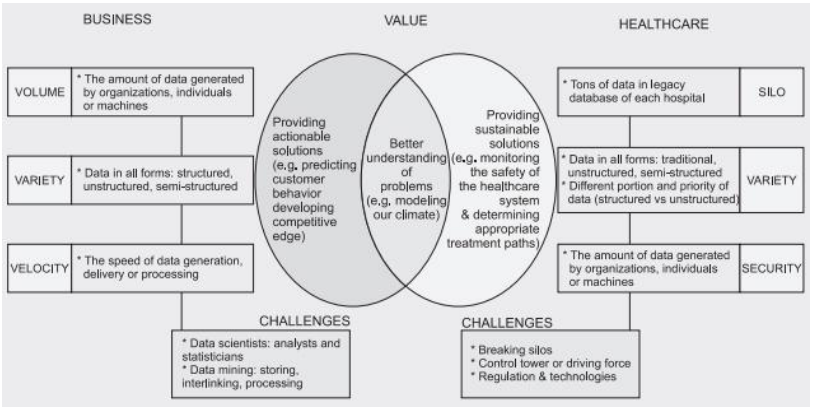

Figure 2: Dataset attributes comparison between business and healthcare sector (Jee & Kim, 2013)

Picking and actualizing the correct innovations to remove esteem, and finding gifted faculty is steady difficulties including big data for both business organizations and healthcare. In any case, the difficulties for healthcare are more extreme as they essentially include separating the healthcare related storehouses for integration, setting up adequate limit for the control towers (e.g., the government data in Bangladesh), and actualizing regulations on security and consistency. An outline of the comparisons of big data as to contrasts in the qualities, values, and test looked by business associations (the "three V's") and the healthcare division (the "two S's and one V" [variety]) appears in Figure 2. Given the distinctions in their plans of action and dataset attributes, the big data application ventures implemented and additionally being started by the healthcare services differ significantly from those in business.

BIG DATA ANALYTICS IN HEALTHCARE SECTOR

Big data analytics is the way toward investigating huge data sets that may contain an assortment of data types to uncover concealed patterns, obscure correlations, market patterns, client preferences and other helpful business data (Russom, 2011). Big data analytics has risen up out of two unmistakable ideas: Big data and analytics. Big data analytics in healthcare is generally an arrangement of strategies, methodology, structures, and advances which are utilized to change raw data into significant and meaningful data. These set of data are utilized to settle on decision making tasks more compelling whether they are tactical, strategic and operational. The accompanying figure 1 delineated the key segments assuming a part in Big Data examination for the healthcare sector.

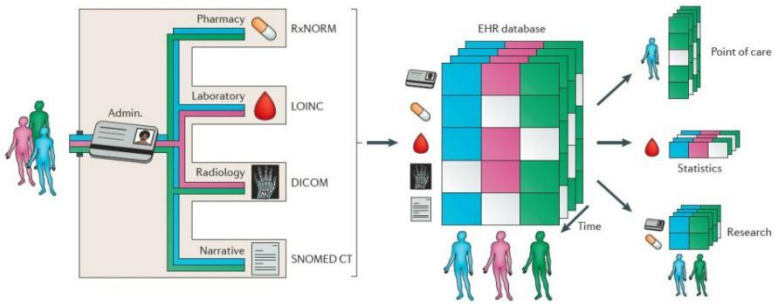

Figure 3: Electronic health record content (Jensen, Jensen, & Brunak, 2012).

The electronic health record (EHR) of a patient can be seen as a storehouse of data in regards to his or her health status in a PC decipherable frame. An experience with the medicinal services framework produces different sorts of patient-connected information. In the case medication, pharmaceutical, lab, imaging and narrative information are altogether produced. Every data type is caught by benchmarks or groupings, for example, RxNorm111 for prescription information, Logical Observation Identifiers Names and Codes (LOINC) for laboratory information and Digital Imaging and Communication in Medicine (DICOM) for imaging documents. Patient information is stored in a database and can be seen in formats coordinating the necessities and specialists of particular user groups. For instance, a clinician may ask for EHR information for a specific patient, a statistical analysis of all lab procedures and a predetermined accomplice extraction for drug research.

BIG DATA IN BANGLADESH

Since the Bangladeshi e-commerce business locales still to a great extent work on cash-on-delivery technique, and on the off chance that people who are not among the few who have a credit card, they most likely didn't have to leave any data about their monetary affiliation there. Yet, the data about their buy record was the one with most noteworthy incentive for the individuals who know its use. Incidentally, as they have been giving away the data that entireties them up-their birth date, height, weight, eye color, national identity no, passport no, spouses name and his/her birthday, their bank's name etc. to for all intents and purposes any individual who gave them a form with blanks, they have sufficiently left enough data for someone to analyze every detail about them. Along these lines, the offerings in that e-business webpage where someone simply submitted a request was actually a calculated intelligent system driven advert directed towards them. Also, someone haplessly tap the 'add to cart' button as the

framework or system realized that odds of them doing such were high. Data has dependably been a key resource for a few organizations, yet over the last three to five years, it has gone from "essential" to "critical." Data, and more critical, data analysis, have turned into a genuine upper hand for every one of the enterprises, not only the Facebooks, Amazons, and Googles of the world.

Hilary Mason, co-author of the book Data Driven: Creating a data culture clarified the purpose for the rising prevalence of big data in three compact focuses. To begin with, CPUs and information storage have turned out to be cheap to the point that it's feasible to gather and analyze that beforehand would have been excessively costly. Second, we have commodity apparatuses that make it conceivable to do this without a huge investment in individuals and infrastructure. Lastly, we've gained a considerable measure of ground as data researchers or data scientists in knowing how to discover value in data (Patil & Mason, 2015).

Beside the three focuses that Mason specified, most organizations, even in a moderately technologically backwards nation like Bangladesh, are gathering altogether a larger number of data amid their ordinary operations than they did before. Super shops like Agora, Meena Bazaar, Shawpno and Nandan are keeping records of clients purchase and with the arrangement of membership cards, they now can store data about those buy propensities in singular matrix. Indeed, even a little Facebook commerce site that offers shoes or cell phone spreads could now gather more data about a client. Technology is an extraordinary equalizer indeed.
However simply gathering and warehousing a heap of data isn't sufficient. To pick up an upper hand, organizations must utilize their data to decide conduct. A definitive objective is for organizations to build a predictive model that is customized. In Bangladesh, organizations have quite recently put its underlying strides in that ocean of big data potentiality.

THE POTENTIALS OF BIG DATA IN BANGLADESHI HEALTH CARE SECTOR

What big data can accomplish for a business, an individual or notwithstanding for a state framework is something which is still to a great extent being investigated in academic arena, also about the practical researches on the issue through large industry-university activity in the developed nations. In Bangladesh, despite the fact that various substantial tier-3 server farms under both public and private activities are built up and it is going to have its first tier-4 server farm, analysis of the potentiality of data is as yet a long way (Report, 2017). Particularly, the hospitals in Bangladesh which for all intents and purposes sit on the vast amount of data of their patients are yet to devise a strategy in utilizing those data genuinely to give their patients a superior service.
Besides, Bangladesh's telecom segment with the world's 15th biggest subscriber base of around 90 million is storing a lot of data. They need to store location data, heaps of messages transaction, call records and data

use and furthermore need to analyze those usage to concoct more aggressive and redid bundle offers for various classes of clients (I. Islam, 2010).

Presently, this multiplication of smart mobile phone and different GPS gadgets offers sponsors a chance to target customers when they are in closeness to a store, a bistro or an eatery. This opens up new income for specialist service providers and offers numerous organizations an opportunity to target new clients.

The ongoing data gathered by the cellphone operators in Bangladesh could be utilized to examine the traffic pattern design in Dhaka and through those data analyses; a superior traffic administration framework could be figured. Big data analytics could even change the battle against corruption. Stories from Panama and Brazil represent how in April 2016, the Panama Papers uncovered the murky dealings of offshore organizations, trusts and foundations in tax havens used to conceal the wealth of the worldwide elite. Data analytics start-ups helped journalists filter through more than 11.5 million evidences and documents to draw an obvious conclusion (Trautman, 2016). The aftermath was extreme and after few days of the discharge, many high-positioning authorities and officials worldwide were under pressure. The source of the data was a leak from inside the Panama-based law office Mossack Fonseca.

In Bangladesh, citizens have the Right to Information (RTI) act and that provides Bangladeshi nationals the privilege to demand and access government data. By examining those data, individual, associations and media could establish the framework for making the administration more responsible in playing out its obligations. At the beginning, these are still early days in Bangladesh for big data. It is as yet advancing as a business idea and in addition powerful tools for administration with the unrevealed technologies. In any case, if other government bodies and business elements in Bangladesh can begin chipping away at uncovering the capability of big data and comprehend, all the apparently pointless data through analyses, calculations, and examination, at that point it may breech in the tech-hole that it has with the technologically developed parts of the world

The absence of sufficient medicinal services is prompting a more prominent bit of personal income to be spent on healthcare services. As per the Household Income and Expenditure Survey, just a pitiful 24.6% of Bangladeshi families were secured by the social safety net program in 2010 contrasted with the worldwide normal of very nearly 60% (Ahmed, 2013). In the meantime, the aggregate functional beds are 92,404-which implies 0.6 beds for every 1000 individuals against the WHO suggested a measure of 3.5 for every 1000 (WorldBank, 2017c).

In spite of the fact that the level of GDP being spent on the healthcare services is moderately higher than it used to be, it is still low contrasted with developed nations which spend through 8-12% of GDP on healthcare. Also, public money in this part in created countries is three times of private cash, though, in Bangladesh, the administration

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commitment to healthcare use is just around 1.1% (A. Islam & Biswas, 2014). Around 60% of the public financing is finished by the Government tax incomes and development expenses, while international development assistance finances the staying 40%.

Figure 4: Health expenditure public, total (% of GDP) (WorldBank, 2017b).

The way that more than 66% of aggregate health expenditure is privately financed, demonstrates that individuals will pay for better healthcare services. Then again, it additionally implies that the lower quintile is compelled to pay for healthcare services when their capacity to pay is at the most reduced cutoff. A couple of NGOs have begun a medical coverage part of their bundle of their micro-credit programs.

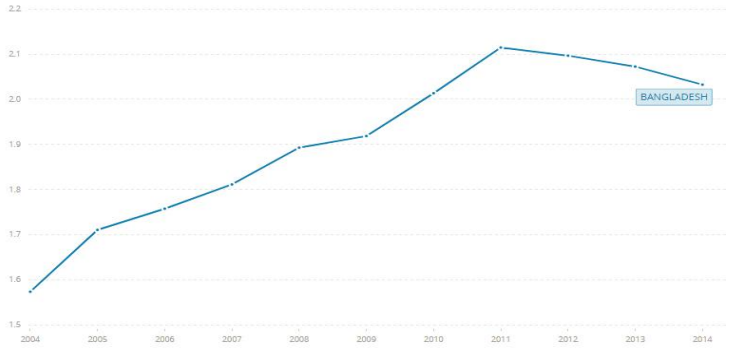

Figure 5: Percentage of private expenditure on health (WorldBank, 2017a).

Other than this, such group financing components and hazard pooling frameworks are essentially non-existent. In Bangladesh, supply-side financing has verifiably been the foundation of health care services as a system to enhance the access of poor family households to fundamental health care services. Be that as it may, now it is executing a few activities

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under request-side financing system, for example, a maternal wellbeing voucher scheme in 33 Upazilas, which was found to altogether enhance get to value and use of maternal wellbeing services (Gupta, Joe, & Rudra, 2010).

PROSPECTS OF BIG DATA IN BANGLADESHI HEALTHCARE SECTOR

This section of the paper discusses the advantages and opportunities of Big data in healthcare. The major prospects are:

1. Big data can help diminish the cost of giving medicinal treatment from multiple points of view. In addition, data analysis offers understanding to healthcare services suppliers to decide population in danger of illness. Thusly, proactive advances can be taken at first. Data and its analytics are more efficient to even share. Big data and analytics would more be able to precisely pinpoint where training and aversion are expected to create a healthier community to bring down expenses. Treatment is more proof based utilizing Big Data analytics.

2. By analysis of data, the present condition of health of patients gives understanding to them to take more responsibility for healthcare. The data sharing system expands efficiency and diminishing overlapping of information. By in this manner, it is improving the coordination of care. The counteractive action is constantly superior to cure. Following this thumb of manages, with the appearance of Big Data analytics, it is anything but not difficult to catch, break down and compare prior to offering a preventive care in a proper way. By utilizing diverse analytical methodologies including data mining and text mining procedures, health pattern or trend examination and extensive patient management are all the simpler utilizing Big Data Analytics.

3. In recent years, it is conceivable to foresee the way of lifestyle diseases through hereditary blueprints. Big data will additionally customize drug by deciding the tests and medications required for every patient. The arrangement of prior treatment can decrease the health costs and can wipe out the danger of chronic diseases. Innovation is helping suppliers make virtual care activities that enhance the quality of care and provide patients with more access to the technology (Beall).

4. The tracking and identification of patients with type 2 diabetes are talked about in the late article (Bradley, 2013). The author suggests utilizing a two-step procedure to distinguish subsets of patients that have similar

clinical signs and care designs. In an initial step, patients are isolated into groups based on the primary diagnosis. At that point after, a measurable grouping technique is connected to additionally divide the subsets. This strategy utilizes promptly accessible administrative datasets. Likewise, patients must be followed longitudinally to decide pattern for treatment. In this manner, the technique is applicable in situations where patient data is accessible after some time and across suppliers (White, 2014).

5. Electronic health record (EHR) information may likewise be utilized to study about drug viability (Staa, Klungel, & Smeeth, 2014). Researchers at the University of Pennsylvania School of Medicine thought about the aftereffects of randomized controlled trials as opposed to utilizing an EMR to look at cardiovascular results. It has been watched that the cost of randomized controlled trials is considerably higher than the cost of utilizing promptly accessible EHR data to think about treatment modalities (White, 2014).

CHALLENGES OF BIG DATA EXECUTION IN BANGLADESHI HEALTHCARE SECTOR

Some of the significant difficulties and dangers of big data execution in Bangladeshi healthcare sector are discussed below.

1. Huge Data frameworks require data analysts, data scientists with particular experience to design, analyze, execution, and proceeded with utilize. The McKinsey Global Institute gauges that there will be a more than 100,000-man lack through 2020. It implies that mean 50– 60% of data analyst, data scientist positions may go empty. Information researchers require profoundly specialized ranges of abilities. They should have delicate technical skill sets, for example, correspondence, team effort, authority, imagination, and more (Rezaee & Wang, 2017).

2. One of the significant difficulties in utilizing health care's huge information to its full degree is policies that protect the privacy of patient's information in Bangladesh which is yet not strict till date. Numerous laws ensure the patient's data and not uncover the patient's identity that makes the big data analytics troublesome. Actually, now and then healthcare providers are themselves reluctant to share patient's data because of huge competition in Bangladesh. A doctor may not want their competitors to know precisely what number and which sorts of techniques they performed and where. Additionally, the demographics of hospitals give one financial standpoint over another. A portion of datasets is openly

accessible however these data sources are normally historical data or restricted to government payers (White, 2014).

3. To have an advantage through Big Data analytics, it is necessary for an organization level administration and analysis and in addition a huge-scale speculation. In healthcare area, the data is in unstructured shape. These unstructured data are as pictures, charts, notes, graphs of specialist's, doctors and so forth. Aside from this, the nature of structured data is for the most part heterogeneous. These may lead an enormous issue at the season of accumulation of these data. Normal language processing and free-text software could take care of this issue to some degree yet it is in its underlying stage.

CONCLUSION

Big data investigation can possibly change the way healthcare providers in Bangladesh utilize sophisticated technologies to pick up knowledge or insights from their clinical and other data storehouses and come up with an informed and appropriate decision. Later on, we'll see the quick, far-reaching usage and utilization of big data analytics over the healthcare industry and the healthcare organization in Bangladesh. Keeping that in mind, the few difficulties featured above must be addressed. As big data analytics turns out to be more standard, issues, for example, ensuring protection and privacy, defending security, setting up benchmarks, standards, and governance, and persistently enhancing tools and technologies will accumulate consideration. Big data analytics and applications in Bangladeshi healthcare are at an early phase of improvement, however quick advances in platforms and tools can quicken their developing process.

Big data is the most recent development in the field data management frameworks. On the opposite side, the digitalization in healthcare division is in the top in other countries. As we talked about in the paper, there are several open doors for Big data in human data analytics in Bangladeshi healthcare segment. In the interim, the technological headway is quickly going ahead towards the usage of Big data analytics. Soon there will be a far-reaching usage of big data analytics over the healthcare industry and the organizations. The Big data analytics in Bangladeshi healthcare could spare a great number of lives from many diseases and enhance the patient services.

Every big data project in driving nations' administrations and healthcare sectors have a comparable general shared objective, for example, the arrangement of simple and equal access to public services, better citizens' medicinal services and the change of medically related concerns. In any case, every government, administration or healthcare stakeholder has its own particular needs, opportunities, and dangers, in light of its nation's one of a kind environment (e.g., medicinal services

consumptions in the United States, the wasteful and healthcare framework in Japan, regional incongruities in the healthcare resources in Korea, and so forth.) which big data ventures must address.

Finally, this study is limited in that the practical application of big data in Bangladesh for researching health care issues have not yet been completely shown because of the lack of practice. As to future examination, researchers and practitioners ought to deliberately take a gander at and collect data with respect to the uses of big data in Bangladeshi healthcare sector keeping in mind that the end goal is to decide ideal methods for utilizing big data in healthcare issues.

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