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REVIEWING HEALTHCARE ZONE WITH BLOCKCHAIN ASPECTS

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Abstract:

Blockchain is a cutting-edge technology that will be used to develop novel solutions in a variety of fields, including healthcare. In the healthcare system, a Blockchain network is used to store and share patient data across systems of hospitals, diagnostic laboratories, pharmacies, and clinicians. In the medical profession, blockchain applications can bring transparency, which will avoid patients leading towards dangerous consequences. As a result, it has the potential to increase the performance, security, and transparency of medical data sharing in the healthcare system. Medical institutions have started using this technology to obtain insight and improve the analysis of medical records. In this paper, studies of how blockchain vendors provide solutions to the problems faced by healthcare industries are discussed.

Keywords: *Blockchain, Healthcare, Data Storage, Ledger, BurstIQ, MedicalChain, Simply Vital, Robomed, Chronicled, BlockPharma*

Introduction:

Blockchain is a decentralized system that stores data in an encrypted format. Blockchain is a public ledger that records transactions in such a way that no record can be changed retrospectively without affecting subsequent blocks. Each 'block' in the blockchain is authenticated and linked to the one before it, making a continuous chain in chronological order. Blockchain delivers a high level of accountability because every transaction is recorded and verified publicly. No one can change the information written in the Blockchain after it has been entered. Data is stored on networks rather than a central database, which improves stability. [1], [2], [3].

Blockchain is a distributed ledger network that requires common consensus to add, delete or modify data. A cryptographic hash that connects newly added information block records with each data block determines the value of a Blockchain hash. Data is not centralized, which makes it accessible and transparent to all network members, this decentralized architecture protects and strengthens the system by preventing attacks at a single point. [4,5].

Need of Blockchain in Healthcare:

Blockchain technology can prove to be of great use in the healthcare sector also. Health record data of the patient can be stored on the blockchain and can be secured by the private key. So that patient storing their medical records on a blockchain will be assured of privacy. It also allows easy maintenance, monitoring, and good control of health data by avoiding traditional medical practices, saving time and resources for both practitioners and patients. Citizens can participate in health research studies using Blockchain technology. Furthermore, better study and sharing data on public well-being would improve treatment for various groups.

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Securing Patients Data:

The most prominent blockchain healthcare application at the moment is keeping patients' sensitive medical data safe and secure. As blockchain is incorruptible, decentralized, and can maintain a transparent log of all patient data, it is really suitable for security solutions. As Blockchain is decentralized in nature, patients, doctors, and healthcare providers can all share the same information promptly and safely.

BurstIQ:

BurstIQ is one of the top provider of blockchain-enabled data solutions for healthcare. BurstIQ's platform enables healthcare organizations to manage huge amounts of patient data in a safe and secure manner. Its blockchain technology allows for the secure storage and sharing of data, as well as a better understanding of the various aspects that affect health. BurstIQ's platform, which has complete and up-to-date information about individuals' health and healthcare activity, could aid in the detection of opioid and other prescription drug abuse. To generate multi-dimensional profiles of people, places, and things and empower interactions between them, the platform blends blockchain with Big Data and machine intelligence.

Medical Chain:

Medicalchain is a collaborative, smart healthcare platform that leverages blockchain technology to securely store health records. The blockchain used by Medicalchain ensures the integrity of health records while also establishing a single point of truth. Doctors, hospitals, and laboratories can all request patient information from the record stored on the blockchain. It will keep the patient's identity safe. MyClinic.com, a telemedicine platform, was launched by Medicalchain in May of 2018. It allows patients to video chat with their doctors and pay for those consultations using "MedTokens."

Better Patient Care:

The healthcare business loses a lot of money due to miscommunication between medical experts. Obtaining access to a patient's medical records takes time, which drains staff resources and delays patient care. Medical records built on the blockchain could be the answer to these problems. The technology's decentralized structure creates a single network of patient data that doctors, hospitals, pharmacies, and everyone involved in treatment may access quickly and efficiently. The blockchain can help with speedier diagnostics and personalized care regimens.

Simply Vital:

SimplyVital Health is transforming the healthcare business with blockchain technology. ConnectingCare and Health Nexus are the company's two products, each of which address various aspects and targets within the sector. ConnectingCare is a platform based on the blockchain. It employs care coordination and financial forecasting to assist bundled payment providers in gaining insight into what happens to patients after they leave the hospital. Health Nexus is a healthcare-specific platform that handles data accessibility, payments, and storage.

Robomed:

The Robomed network is a blockchain-based system that aims to improve modern medical services in the healthcare industry. The effective platform, which is developed to benefit both patients and medical service providers, intends to assist patients in healing more quickly and comfortably. The Robomed platform enables interaction between healthcare providers and patients via smart contracts, ensuring that they receive correct, timely attention while also keeping track of customer satisfaction with the services provided. Robomed EHR, Robomed Mobile, and Robomed Web are all part

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of the Robomed software network. The Ethereum blockchain smart contracts are used by the Robomed EHR to manage health records and the organization's operations. It aids in the creation of universal medical standards by allowing for control of the delivery of medical services to patients and interactions between healthcare practitioners. The Robomed Mobile is a mobile application that allows a patient to communicate with a medical care provider and get medical advice. The Robomed web version is a more advanced version of the Robomed Mobile, allowing a community of patients to communicate with medical care providers in general.

Supply Chain Management:

The decentralization of blockchain ensures complete transparency in the shipping process, which is very important for the pharmaceutical supply chain management. The point of origin will be marked as a laboratory on a drug ledger once it is generated. Until the drug reaches the consumer, each and every activity is recorded on the ledger, including who handled it and where it went. The system can also keep track of labor expenditures and waste emissions.

Chronicled:

Chronicled creates chain-of-custody-proof blockchain networks. The networks assist pharmaceutical businesses in ensuring that their drugs arrive on time, as well as allowing law enforcement to investigate any suspect activities, such as drug trafficking. In 2017, Chronicled launched the Mediledger Project, a distributed ledger solution focused on medical supply chain security, privacy, and efficiency.

BlockPharma:

Blockpharma is a company that specializes in anti-counterfeiting and medication tracking. People can avoid consuming fraudulent pharmaceuticals with the aid of the company's blockchain-based application. The software that the firm uses checks the supply chain and validates all points of shipping, accordingly warn patients if they are receiving counterfeit pharmaceuticals. Blockpharma uses a blockchain-based SCM system to identify fraudulent pharmaceuticals.

Challenges:

1. Scalability:- Blockchain suffers from scalability issues as the throughput of blockchain is less than that of a conventional centralized system.
2. Smart Contracts:- A smart contract that is poorly designed or written can have low performance, inadequate security, and high transaction execution rates.
3. High Cost:- Operating cost of blockchain technology is high as it requires high data storage capacity.
4. Lack of knowledge:- Due to a lack of knowledge about blockchain and its potential, as well as a shortage of competent specialists, there is still a reluctance to change and adapt the blockchain system.

Conclusion:

In healthcare, blockchain has a wide range of applications and functions. The ledger technology allows for the safe transmission of patient medical information, better management of the drug supply chain, and improved patient care. Blockchain is yet to be used to its full potential in healthcare industry. Putting effort in this field is important, for the betterment of human society. Major setback in the use of blockchain is lack of skilled personnel in blockchain industry who are well versed with every aspects of blockchain. We should promote this technology so we get skilled personnel in the market.

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