Healthcare and Blockchain - A Partnership for Efficient Patient Care

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Blockchain is a repository that stores ciphered information blocks and connects them to create set record of information. Rather than copying or transferring, digital resources are distributed instead. This asset is decentralized, allowing for full public access in real time. A transparent archive of changes preserves the integrity of the document, leading to greater trust in the resource. Blockchain'ssecurity measures make it a prime technology for almost every industry. Blockchain technology is a revolutionary and promising technology due to its ability to reduce risk, end fraud, and provide transparency in a scalable way for a wide range of applications.

Uses of blockchain in stem cell research

Blockchain technology can be utilized to make collective knowledge more accessible. This renders it a perfect fit for Healthcare research. A blockchain-based fraternized network can be designed to makeit a medium of research and development in the stem cell industry across the globe. On the basis of researched results and latest developments, collective knowledge can be continuously refined. The database will also serve as a repository for patient health information. Data will not only be stored on the registry of blockchain but the users will be in control of its access. As a result, patients can share relevant health information with doctors all over the world. Using this service, everyone in the world would have access to the latest stem cell research.

Use of blockchain for advanced therapies

When integrated platform like blockchain will be put into practice in context to supply chain and manufacturing of advance

therapies, the standard will be pushed towards a safer and secure delivery process, thereby stimulating express acquisition of the technology. This innovation can lessen the expense of superintending good manufacturing practices. The transparent technology can decline the health care costs by reducing communication errors and saving time spent. As a result of the blockchain solution, tiniest details can be better tracked and rendered more transparent at all stages, allowing for true personalized treatment pathways to be achieved through a digital evolution in supplychain management.

Use of blockchain in COVID-19

Blockchain in health sector has the capacity to enhance services associated with the prevention and control of ailments. This would help for better clinical risk management in the event of a pandemic causing emergency such as COVID-19. Coronavirus arriving instantaneously and was speedily and indefinitely spreading around the world, showed not only the insufficiency of current healthcare surveillance systems in managing a health emergency but also the lack of advanced prediction systems. Obtaining, conserving, and sharing clinical data would also facilitate the development of precision medicine and, as a result, provide more personalized prevention, diagnosis, and interventionfor each individual patient (patient-tailored treatment). The blockchain can be a valuable tool for knowledge management that facilitates dissemination of evidence-based medicine and best clinical practices. By analysing electronic health records from around the world or clinical data related to particular or rare pathological cases, one can (i) build a predictive model; (ii) predict healthcare outcomes by using the re-elaborated data. By

using this kind of tool, healthcare organizations can prevent and contain the onset of adverse events, contributing to the strategy of clinical risk management. Blockchain in association with AI can be helpful in predicting future epidemics.
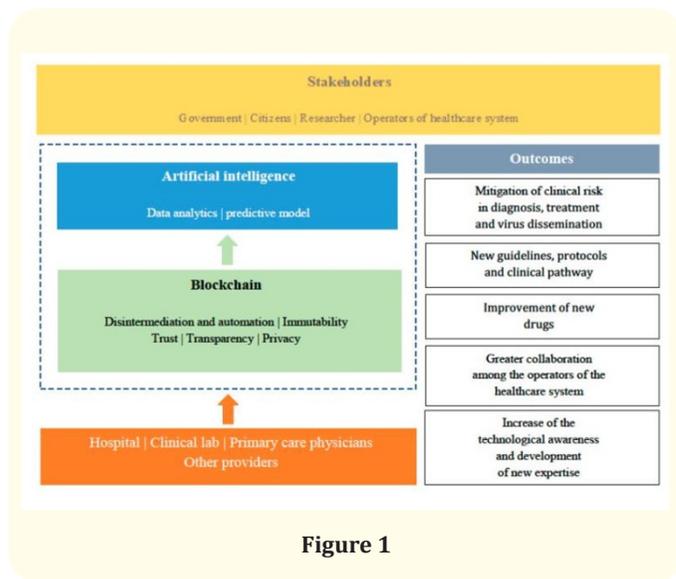

Figure 1

Use of Blockchain in neurological rehabilitation

The rehabilitation process for neuro patients usually entails long periods of treatment, multiple transfers to other hospitals, and a great deal of information regarding their condition since they often suffer impairments in multiple capacities at the same time. The treatment requires a multidisciplinary approach. As a result, rehab becomes complex which poses a challenge to medical practitioners, patients, and their families, due to the amount of information involved. Patients and their peers are expected to carry around a large file of medical records, including their medical history, test results, and prognosis report when they approach different therapists. Blockchain overcomes the task of printing the patient's medical information. Blockchain provides doctors easy access to data on such patients without the need to re-take their histories or re-examine them which in turn, reduces the cost of health care for patients. As an added benefit of blockchain, information in the network can also be used for academic research on rehabilitation by making the data confidential to the public, thereby respecting patient's privacy and aligning towards bioethics. This will enable large-scale studies and improve the accuracy of academic research.