BioSpectrum the business of Bio & Health Sciences

Blockchain-powered health tech raises standard care in oncology

09 December 2021 | Views

The availability of the complete medical history and patient's data will open new frontiers in personalised medicine notably in cancer and other chronic diseases

Among an array of innovative technologies, blockchain and AI stand out, given the astounding potential each has in the telemedicine market in particular and for efficient health care in general. Blockchain has made electronic health records more patient-centric in specific ways. The decentralised basis for maintaining data enables patients to gain easy and quick access to medical data across multiple providers, making the patient's journey more rewarding.

Another key proposition that make blockchain intriguing is its use in medical staff credential verification.

Data privacy and security key archetypes: Toward trustable and rapid EHR data management

The decentralisation of health information in electronic health records (HER) is important. Various stakeholders in digitising healthcare systems the world over are fervently exploring the role of blockchain in the telemedicine market. Enormous efforts to improve the security and privacy of telehealth and telemedicine services by leveraging the inherent characteristics of blockchain, namely transparency, immutability, auditability, and anonymity of users and data. The strengths of blockchain technologies stem from the aspect that they can be weaved in eHealth systems into making open network.

A case in point is the potential of blockchain-based eHealth for traceability that help in detecting frauds related to patients' insurance claims and checking of physician credentials. To give another concrete example, a blockchain platform could help in determining role-based consent for data upload in EHR. The outcome is reflected in increased integrity, confidentiality, and reliability of health documents in telehealth.

Stridently, the decentralised blockchain-driven telehealth will lay the framework for fast and real-time EHR. State-of-the-art technologies and cryptography algorithms are opening new frontiers in patient care in oncology.

Players building robust blockchain platforms to drive adoption of telemedicine systems in oncology

One area where blockchain can open a new paradigm is tele-oncology. Telehealth is part of the cancer care delivery continuum has made some spectacular strides in recent times, riding on the wave of the COVID-19 pandemic, where cancer care was largely remotely practised. Ranging from accessing data for clinical trials for cancer research to promoting access to on-demand teleconferences for cancer patients, the blockchain framework has come to underpin a new data-sharing model in oncology. As diverse and complex as the problem of managing cancer is, players in the telemedicine market are keen on harnessing decentralised public blockchain.

Cancer research companies in collaboration with governments in various countries are instrumental in leveraging the strengths of blockchain for robust data management for research and treatment. The integration of blockchain with artificial intelligence (AI) technologies has set the tone for new security controls in eHealth.

Stakeholders use blockchain-based data sharing to reach high at-risk patients faster

The medical community is ebullient. Blockchain technology platforms have the potential to transform the landscape of cancer research and treatment. The potential has already been making waves in cancer screening of cervical and breast cancer. Cancer research companies in developed nations such as the UK.are leveraging blockchain for data-sharing models for increasing access to screening programmes.

A UK-based company has developed a blockchain system that will help oncology companies utilise data patterns to identify the most at-risk groups. Another early adopter, a Germany-based company, has leveraged blockchain for managing patients' data for the cohort undergoing CAR-T cell immunotherapy treatments. Other companies who are ardently supporting cutting-edge health informatics management systems pin hopes on blockchain for managing patient-provider communication platforms. After high-risk patients are identified, blockchain-powered telemedicine will open new avenues in digital cancer genetic counselling. An example is the growing use of chat-bot counselling.

Bringing all stakeholders on the same page—Opening new lines of treatment and personalised care

Other promising areas of application of blockchain systems and cryptocurrencies in electronic health records are access-control policy enforcement and consent management. Blockchain-based healthcare data management systems will gain popularity to set a new system for data-sharing, medical research, and the pharmaceutical supply chain. Early staging of cancer and diagnosis are crucial for reducing the disease burden. The blockchain system plays a vital role here—bringing multiple stakeholders on one page.

The entire cancer journey of patients is fraught with difficulties of lack of information that can empower them to get a tailored answer to various aspects such as subsequent line of treatment, what clinical trials should they participate in, and information to caregivers. Blockchain is emerging as the new paradigm for comprehensive medical care in oncology.

Telehealth apps powered by AI and driven by blockchain platforms are bridging the gap between continuous innovations in cancer treatments. This will pave the way for the discovery of the latest treatments. An app with such transformative potential is CURIA built on the OncoCoin platform, which is generating buzz to cancer patients in India.

The tech platform is using Ethereum to nudge patients to share clinical data and information about cancer type, stage, and demographics. The outcome is facilitating access to the correct, which helps patients converse and bond with oncologists, which eventually advances the line of care. The AI Company Innoplexus hopes to make the app available to users in India in regional languages shortly. Given the breakneck speed at which cancer treatments are evolving, it makes sense for players in the telemedicine market to bank on these possibilities. Furthermore, the availability of the complete medical history and patient's data will open new frontiers in personalised medicine notably in cancer and other chronic diseases. A growing trend is the smart decentralisation of personal health records. AI when integrated with blockchain is being pursued mass delivery of personalised medications. The integration of the two open a new avenue in personalised cardiovascular medicine, for instance.

--- Rohit Bhisey, Director of Marketing, Transparency Market Research