Blockchain and Healthcare with Digipharm

There are few topics universally applicable to every human. Family, money, and happiness are all priorities we juggle daily. Healthcare is one thread that ties these all together, but it is getting more expensive over time. In 2017 the cost of healthcare in the US rose to $3.5 trillion, or over $10,000 per person. An article from the accounting firm Deloitte projects the global healthcare market to reach $10 trillion by the year 2022. These costs are mainly due to the ever-increasing overhead of hospitals, drug costs, and the current payment model. While it has been suggested that the healthcare industry could solve these issues using blockchain technology, few companies have stepped forward to tackle the challenge. The healthcare startup Digipharm has created a solution to this opportunity using blockchain and a Value-Based Care model.

The Problem

(Picture credit)

The current Healthcare payment system in the US is antiquated and based on the For-Fee-Services (FFS) model. Every doctor visit, surgery, or hospital stay, is treated as an individual event for payment purposes. This means every time a patient receives treatment, they are charged based on the price of that medical service. While a traditional method of payment, this encourages more procedures and treatments, as hospitals are profitable due to the volume of services ordered. The more patients and services rendered, the higher the revenue generated by the hospital or medical provider. Because of this, doctors regularly order unnecessary tests for patients. A 2017 article from PBS stated that over $200 billion was wasted on unneeded testing and treatment: "At Cedars-Sinai Medical Center in Los Angeles, officials said that economic incentives still drive hospitals to think that more is better." This is good for the hospital billing department but bad for the average consumer.

While the incurred costs of these "extra" care and treatment are unfortunate, they only affect individuals currently in need. Perhaps the more significant problem is the mishandling and theft of medical records to all members of a healthcare network. In 2015, NBC reported that 1 in 3 health records in the US was compromised. In other words, over 100 million records were stolen. Some of these files find their way on the black market where they are sold for up to $60 apiece. With stolen medical records, criminals can order prescriptions, hospital visits, and commit identity theft.

The Solution

(Picture credit)

Digipharm aims to solve these issues through various means. Primarily, they will work with hospitals and insurance companies to institute a Value-Based Care (VBC) system. In short, VBC's goal is to reduce medical costs while maintaining a high level of care and services to patients. As the Healthcare publication NEJM Catalyst explains:

> "Value-based care differs from a fee-for-service or capitated approach, in which providers are paid based on the amount of healthcare services they deliver. The "value" in value-based healthcare is derived from measuring health outcomes against the cost of delivering the outcomes."

By focusing on overall patient care instead of treating patients a la carte, the VBC model is positioned to improve care while lowering costs. Based on their research, NEJM Catalyst expects the adoptions of VBC programs to accelerate at a moderate to fast pace in the next 2-4 years. Major healthcare companies like Kaiser Permanente, Medtronic, and the Minister of Health of the Netherlands have all shown support for the VBC model.

One VBC use care is working with insurance companies to bundle the costs of treatment based on the patient condition and length of hospital stay (full care cycle). Hospitals keep a portion of the saved funds that would have gone to traditional medical payments. As this system is focused on patient care, this is particularly useful for timely treatments and illness prevention. In particular, cases of cancer, diabetes, and obesity stand to benefit from this change in policy. To facilitate this model, electronic medical records (EMR's) need to be shared across a group of providers. As NEJM illustrates:

> "The goal of EMRs is to put crucial patient information at each provider's fingertips, allowing individual providers to see results of tests and procedures performed by other clinicians on the team. This data sharing has the potential to reduce redundant care and associated costs."

Though it is convenient, the sharing of medical records electronically increases the chance that they are stolen, as previously mentioned. Since blockchains like Bitcoin and Ethereum are public and searchable on the internet, Digipharm's solution is to use private channels on a permissioned blockchain. From the whitepaper: "The use of cryptographically encrypted blockchain technology also eliminates all patient privacy and data security concerns that affect current RWE (Real World Evidence) generation systems." By increasing the safety of patient information, Digipharm has positioned itself to be a security model in the healthcare field. "Peers on private chains can be decoupled into distinct roles. Confidential information can be broadcast to specific peers with the proper permissions on the network to maintain complete confidentiality." Digipharm has developed a Decentralized Identity (DID) protocol to handle this security challenge, not dissimilar from what Microsoft recently announced.

An added benefit is patients not only have access to their medical data on the Digipharm network, but they also have full control over it. Users can choose which entities they securely share their medical records, and monitor them through the Digipharm portal. They are also able to opt-in to Digipharms data-sharing program in research surveys, earning them Digipharm tokens (DPH) in exchange for specific medical information. Currently, medical record data is

being [sold to corporations](#) for data mining by firms such as IBM, and then resold to other smaller marketing groups. This current model provides zero compensation to patients, who are unaware that their data is being used by third parties.

Tokenomics

As a blockchain project, the Digipharm platform uses ERC-20 tokens to make requests within the network. These tokens will be used to enroll patients, access medical records, and generate patient-relevant research studies. Since all transactions will be conducted with the DPH token, early adopters stand to benefit the most as DPH will be traded on cryptocurrency exchanges post-launch. The token sale goes live on 5/29/2019.

Digipharm has positioned itself to be a first-mover in the healthcare community. By creating an ecosystem with blockchain as its technological backbone, it is equipped to replace the legacy finance model for medical providers and insurers alike.

Find out more about Digipharm by visiting their website at https://digipharm.io/index.html

- Kaltoro