# BLOCKCHAIN & HEALTHCARE
WILL THERE BE OFFSPRING?

Blockchain technology was invented in 2009 as platform for cryptocurrencies (most of us are familiar with bitcoin). In essence, it is a generic tool to keep secure data in a decentralized encrypted ledger of transactions across a peer-to-peer network. With this network, participants may confirm transactions without the need for a centralized certifying body. So there is one shared secure ledger which is spread across a network of synchronized, replicated databases which are visible to anyone with access to the system.

Every time a digital transaction occurs, it is encrypted in a 'block' with other transactions happening at the same time, hence its name. Taking the fintech industry as example, these transactions would consist of buying and selling executions. In healthcare, taking hospital electronic records as an example, these 'blocks' would relate to e.g. investigation results such as bloods. These executions are validated, in our case by physicians, having an access key. Then the blockchain software timestamps each validated block and adds it to the existing chain of older blocks, in chronological order. The sequence shows every transaction made in the history of that ledger, whether it be bloods or an arthroscopy [healthcare], or bitcoin sales [fintech].
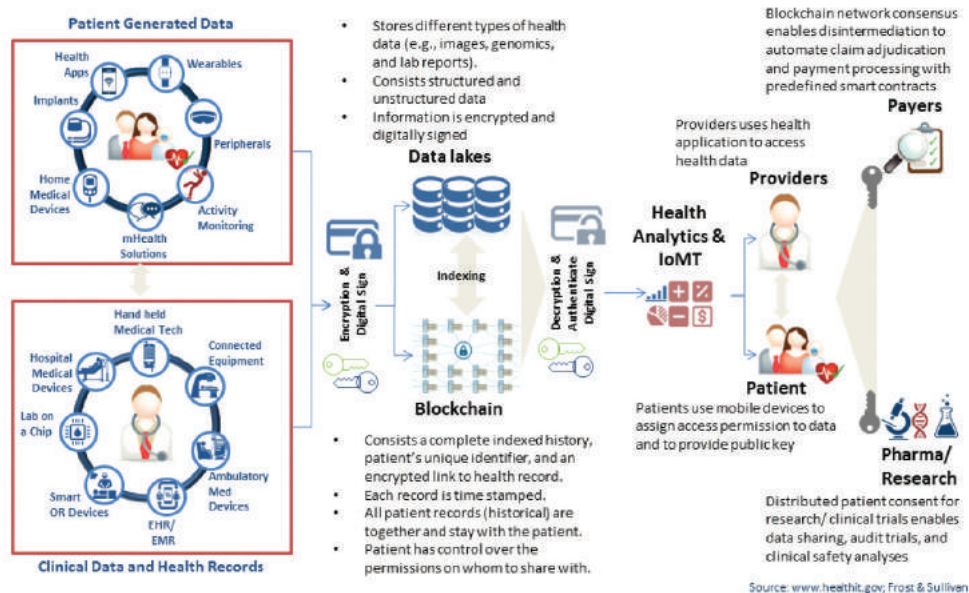
This technology is also particularly relevant for medication administration records. Let us consider a patient who is taking clopidogrel, paracetamol and simvastatin. Today, each electronic record [where available] is essentially a snapshot; it doesn't necessarily tell the prescriber what the patient is actually taking at a specific moment in time. But with blockchain, each prescription is like a deposit. When a prescriber discontinues a medication, this is like a withdrawal. Using blockchain, there is no need for a prescriber to go through all the 'deposits' and 'withdrawals' - they would just see the real-time 'balance'.

In the next issue, we will discuss even further the interesting applications of blockchain in our field.

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