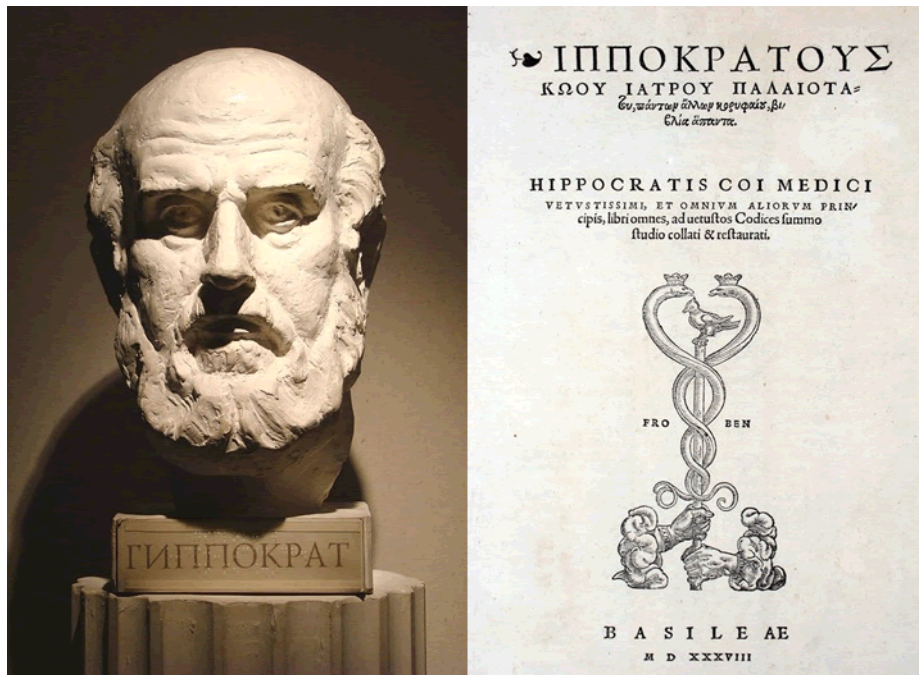


Ιπποκράτης to サトシ・ナカモト



Satoshi Nakamoto

Born	5 April 1975 (claimed) Japan (claimed)
Nationality	Japanese (claimed)
Known for	Inventing bitcoin, implementing the first blockchain, deploying the first decentralized digital currency
	Scientific career
Fields	Digital currencies, computer science, cryptography

Bryant Joseph GILOT, MD CM DPhil MSc

DECENTRALIZED 2017

Limassol, Cyprus

3 November 2017

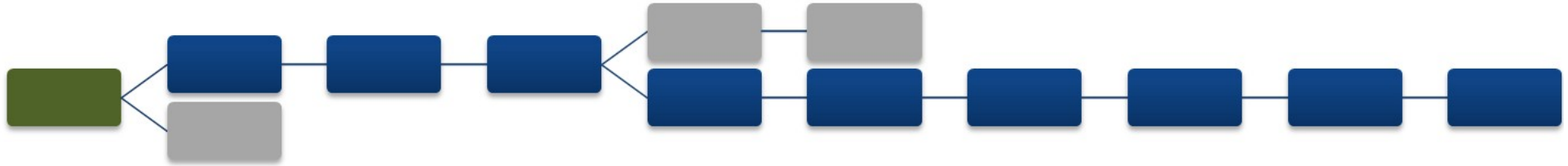
Zentrum für Personalisierte Medizin
Eberhard Karls Universität Tübingen
Tübingen, Germany

Chief Medical Officer
Blockchain Health Co.
San Francisco, California



EBERHARD KARLS
UNIVERSITÄT
TÜBINGEN





Thomas Goslee

@tginch

Following



Payers have a growing interest in blockchain, but providers have cost concerns



Payers have a growing interest in blockchain, but provid...

A recent survey from Black Book proves the healthcare industry sees the value in blockchain technology. But it also unearths the fact that payers seem more ready and willing to adopt these sol...

medcitynews.com

11:27 PM - 20 Oct 2017



Tweet your reply

Deloitte.

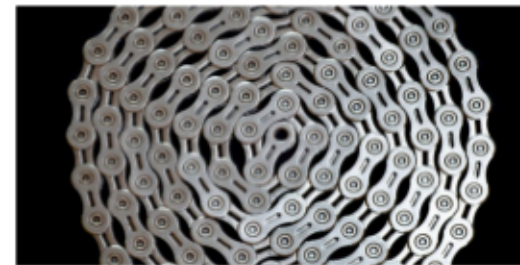
CIO Insights and Analysis from Deloitte

CONTENT FROM OUR SPONSOR

Please note: The Wall Street Journal News Department was not involved in the creation of the content below.

Blockchain's Potential in Health Care

Blockchain technologies could revolutionize the way health care organizations, life sciences companies, and other entities manage and exchange patient information.



The current state of health care records is often disjointed because the lack of common architectures and standards impedes the safe transfer of sensitive information among entities. Increasingly, blockchain technology is emerging as a promising new framework for addressing the problem.

<http://deloitte.wsj.com/cio/2016/11/29/the-potential-of-blockchain-in-health-care/>

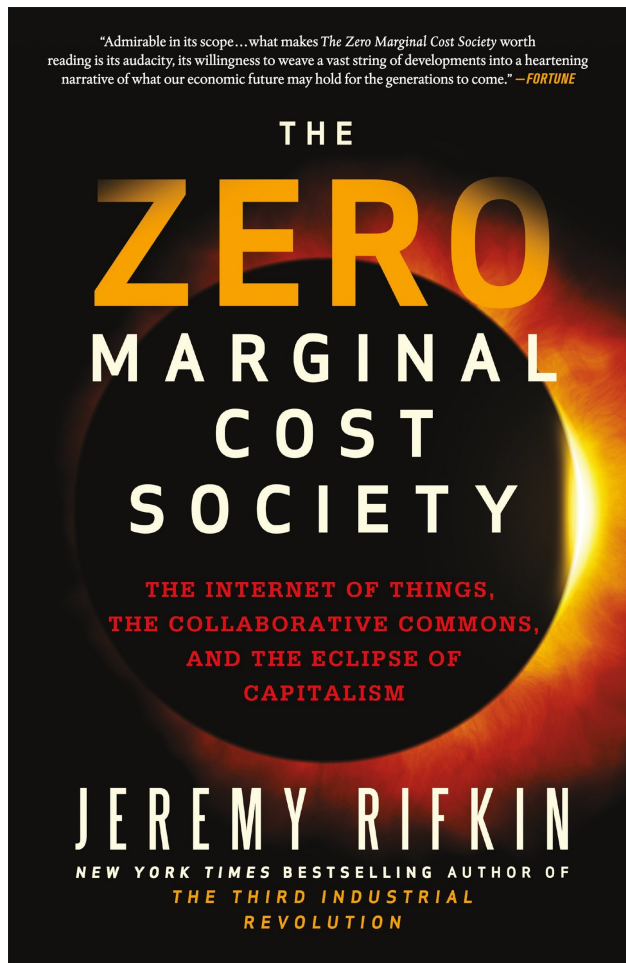
<https://medcitynews.com/2017/10/payers-providers-blockchain/>

COMMENTARY

Metcalfe's law and the biology information commons

Stephen H Friend & Thea C Norman

Open collaboration on biomedical discoveries requires a fundamental shift in the traditional roles and rewards for both investigators and participants in research.



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Max Shron

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RESEARCH

HUMAN GENETICS

Deriving genomic diagnoses without revealing patient genomes

Karthik A. Jagadeesh,^{1*} David J. Wu,^{1*} Johannes A. Birgmeier,¹
Dan Boneh,^{1,2†} Gill Bejerano^{1,3,4†}

Patient genomes are interpretable only in the context of other genomes; however, genome sharing enables discrimination. Thousands of monogenic diseases have yielded definitive genomic diagnoses and potential gene therapy targets. Here we show how to provide such diagnoses while preserving participant privacy through the use of secure multiparty computation. In multiple real scenarios (small patient cohorts, trio analysis, two-hospital collaboration), we used our methods to identify the causal variant and discover previously unrecognized disease genes and variants while keeping up to 99.7% of all participants' most sensitive genomic information private.

Ledger Implemented as a Replicated State-Change Machine

... a '*communications channel*' implemented as a peer to peer database not requiring an intermediary for consensus which allows **multiple** entities with **diverse** economic interests to **collaborate** where it is natural to cheat or seek advantage ...

... an entity given a
[message, transaction, or record]
must be able to convincingly
Self-verify ...

SELF-Verifiable

AUTHOR of the Record

...

CONTENT of the Record

...

STATE before and after each Record

...

Record is complete without ADDITION or OMISSION

...

Highly AUDITABLE without the need for RECONCILIATION

Satoshi's Gift

...

Retain custody and near complete
autonomy over a **financial asset**

...

Retain custody and near complete
autonomy over an **information asset**

...

Key Deliverables: Sophisticated Ledgers

Addressing: Enormous cryptographic key space

...

Access Control: Arbitrary cryptographic challenges
Arbitrary cryptographic proofs

...

Digital Scarcity: Accounting System
Transfer System

...

Digital Immutability: Semi-rigid Times stamping
Non-Repudiation
Notary

HEALTH IN THE DIGITAL SOCIETY DIGITAL SOCIETY FOR HEALTH

16-18 OCTOBER 2017
TALLINN, ESTONIA

 @eHealthTallinn #eHealthTallinn

Organised by:



REPUBLIC OF ESTONIA
MINISTRY OF SOCIAL AFFAIRS



HiMSS Europe

Don't take your organs to heaven with you. Heaven knows we need them here.

(Anonymous)

Don't take your ~~organs~~ to heaven with you. Heaven knows we need ~~them here~~.

DATA

(Anonymous)

‘Anyone? Anyone?’



Ben Stein as Economics Teacher (Character)
from *Ferris Bueller's Day Off* (1986)

The **stethoscope** was invented in France in 1816 by René Lænnec
The Necker-Enfants Malades Hospital in Paris.



(Science Museum, London)

Peritonitis

- Operation

Myocarditis

- Supportive care

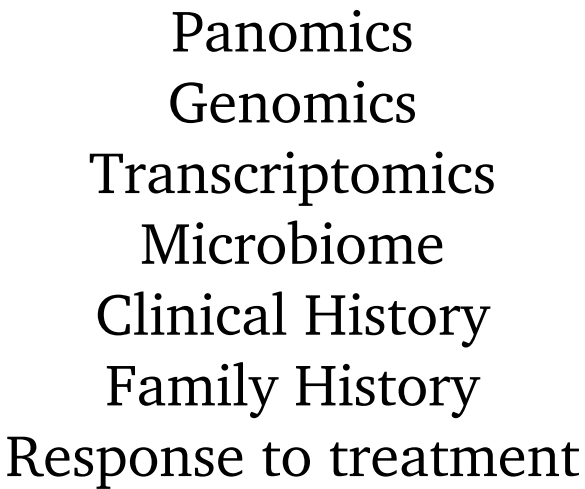
Pneumonia

- Antibiotics

- Isolation

Transformed Medicine along with microscope, etc

Pyræxia (aka fever) become a symptom rather than a diagnosis leading to more appropriate therapies



Hippocrates

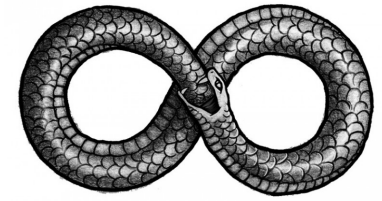
I



Frequency & Statistical analysis

Machine Learning Artificial Intelligence





I



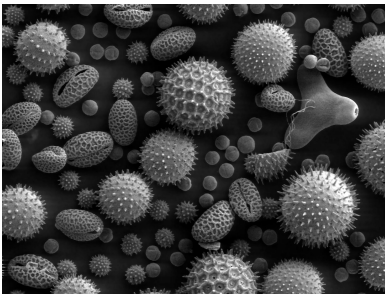
Machine Learning Artificial Intelligence

[illegible]

A black and white illustration of a snake forming a Möbius strip, symbolizing infinity. The snake is depicted with detailed scales and a forked tongue, looping around to connect its head to its tail.



Panomics
Genomics
Transcriptomics
Microbiome
Clinical History
Family History
Response to treatment



By Laura Donnelly Health Editor

THE health service must undergo a "complete transformation" – ending a "paternalistic" ethos of doctor knows best, the NHS medical director has said. Prof Sir Bruce Keogh claimed that healthcare needed to adapt to meet the expectations of generations used to organising holidays and banking online.

Innovations which allow self-monitoring of health, tracking of symptoms, online consultations and shared access to medical data would allow patients to take more control of their health – and relieve pressures on the NHS, he said.

"Not that long ago, if you wanted to book a holiday you went down to the travel agent, looked at a couple of brochures and stared at the back of a computer screen while somebody else typed stuff in," Sir Bruce said.

"Now people just go on to their computer online and they can book very complicated trips all over the world and know what seats they are sitting in."

"There is a growing expectation that the same sort of facility should be available in healthcare," said the former cardiac surgeon, 62, who will stand down as NHS medical director later this year.

"The ability to book appointments online, the ability to access your investigations and their results online.

"I see a complete transformation of healthcare – going from a paternalistic delivery system to a knowledge transfer business, which enables people to take greater care of their health and wellbeing.

Ministers have pledged that by the end of next year, every NHS patient should be able to access their medical records and book an appointment with a GP via one app. Under the plans, all patients should be able to book a doctor's appointment, order a repeat prescription, access NHS 111 or their healthcare record on their smartphone.

But Sir Bruce said the changes were part of a far more significant shift – to hand over more power to patients, and allow them more control over their health, using gadgets and web-based systems. Innovations backed by NHS England include a smartphone gadget which can take a heart reading in just 30 seconds. The mobile heart monitor – called AliveCor – could benefit more than 2.5 million people who suffer from an irregular heartbeat, potentially preventing thousands of deaths.

**'All hospital trusts must
and the disease.**

Population wide Aggregated data

Frequency & Statistical analysis

Machine Learning Artificial Intelligence



Avoiding a Dystopian World

...

Data must **serve & never harm** the donor

...

Retain custody and autonomy over donated data

...

Patients must be included

...

Blockchains are really hard to get right

...

Next Generation Auditable Document Management System



User-Driven

The user has complete control over all data transfers, no exceptions

Everything is confirmed by the user

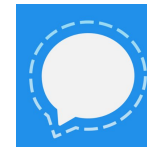
Thank You

<https://blockchainhealth.co/>

<http://www.zpm-tuebingen.de/>



@BlockChainIntel



<https://signal.org/>



<https://www.linkedin.com/in/bgilot/>



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