NEWS RELEASE

OXIO® Health, Inc. Announces
Licensing of New 26th Patent

Greenacres, Florida, USA (July 29, 2021) – OXIO Health, Inc.® ("OXIO") announced today that it has just licensed a new patent titled **"Secure Transmission of Electronic Health Records via Blockchain."**

OVERVIEW

The rapid development of electronic health records (EHRs) resulted in a lack of transparency of patient records between physicians. A patient being treated by different physicians, e.g., from primary care to cardiologist and so on, would have their records siloed, or at best cumbersome to transfer between physicians unless both were using the same EHR program. To correct this shortcoming, the industry recently adopted a standard for defining data formats and elements and an application programming interface (API) for exchanging EHR data. This standard was created by the Health Level Seven International (HL-7) health-care standards organization.

While this new standard, named Fast Healthcare Interoperability Resources® (FHIR®, pronounced "fire"), provides a step toward correcting the interoperability problem, it falls short of providing the security that is obtainable using current and proven records transmission security methods, particularly the blockchain protocols that are a part of the distributed ledger technology (DLT).

As stated by OXIO President, Carl L. Larsen, "This latest patent is a very important addition to OXIO's licensed intellectual property portfolio and our blockchain agenda because it provides a missing piece to the security of the digital health record transfer. The ability to interconnect patient electronic health record systems or EHRs has severely limited their usefulness both in the U.S. as well as globally due to the disparity of the EHR systems and demand for record security."

The underlying problem with interoperability of EHRs, and the problem unresolved by the FHIR protocol, is that it continues to rely on the security of each individual EHR. At best, this issue has proven to be problematic for large enterprises to smaller EHRs and EMRs (electronic medical records), whether embracing the FHIR protocol or not. Linking EHRs/EMRs for the purpose of patient record transfer, without resolving the underlying security of the data record and data transmission, exposes patient medical records to greater vulnerability and unauthorized access.

BLOCKCHAIN PATENT FIXES VULNERABILITIES IN EHR INTEROPERABILITY

This patent helps address the vulnerability of patient records transmitted through the FHIR, and potentially other protocols, by providing an "immutable" and "consensus-based," highly encrypted mathematical algorithm, known as blockchain to ensure individual record security throughout the transmission process. In addition, it ensures that once records are submitted into the blockchain/DLT system and added to each EHR/EMR, the records cannot be deleted or modified, only new records can be added.

As noted by OXIO Health, Inc. President, Carl L. Larsen, "This new patent is one of the key patents within the intellectual property portfolio of OXIO Health, Inc. It materially strengthens our footprint in the Health Information Technology (HIT) space while adding substantially to the value of our offering by addressing a burgeoning problem within the HIT field, whether relating to EHRs, or remote patient care, or medical tourism. It provides the capability for high level encrypted security of patient medical records, as well as potentially giving an individual full autonomy and control of their own medical record information. This patent also provides a path to solving the issue of the "unauthorized" profiteering of patient medical records being sold for research and other uses without the knowledge or consent of the patient."

USE CASES

Blockchain is a straight-forward concept, where all holders of data agree on a consensus as to accuracy– much like living in a small town, where everyone knows everyone else's business. For example, everyone quickly knows that Mrs. Murphy had a baby, and his name is Luke. If someone gets the news wrong, there will not be consensus and the inaccurate information will be spotted and corrected quickly by the residents. Blockchain is a straightforward concept, made complex by the many variations of use.

Consider a filesystem consisting of numerous records or "ledgers" where:
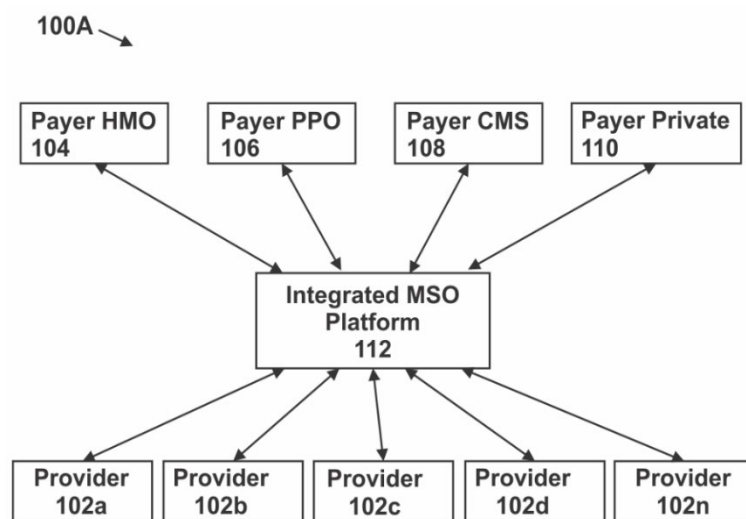
1. Data can only be added to the database – it is "**Immutable**", and existing content is "**Indelible**", it cannot be changed.

2. Data cannot be added that is not "**Consistent**" with the existing data; the patented algorithm contains adaptable congruence rules to ensure that there can be no unauthorized data added – anything that returns "Incongruent" or "Inconsistent" is flagged and returned.

3. There is a universal **Consensus** as to the authenticity of the data by all authorized users of the distributed ledger. The term for this is "**Canonical**", such that any anomaly is easily spotted by all parties and rejected.

4. Each component of data is "**signed"** and "**locked**" to its owner, its contributor. Therefore, it can be copied and made generally available to all parties while retaining it sources.

5. There is no master, central, trusted, custodian of data; it is collectively monitored by all parties in a decentralized manner. Trust does not depend on a single entity; it is distributed across all parties ensuring data integrity and validity.

The file system is a distributed ledger with linked blocks potentially spread over many servers. Each chain addition is replicated and distributed to all, where each member of the chain has signed their name to the data. Once a chain is created, it is indelible, it cannot be altered, only appended to a new valid segment. The linked sequence of blocks shows the history of the data, who added what and when. Since additions to the chain are indelible, data stored in one block will be deliberately redundant with others. The blockchain thereby forms a self-governing digital distributed ledger that is permanent yet is accessible from any participant on the Internet without intermediaries.

Medical and Healthcare Use Cases

The concept is useful in large medical databases, where such record systems may be used for medical or drug research, epidemiology, or healthcare. The drawing (100A) to the left depicts an integrated Managed Services Organization (112), like OXIO's, PW*e*R®, EHR system. There are multiple payers (104-110) and multiple providers (102a-n). Everyone is assured accurate data by way of Blockchain transmission. Data is thereby transferred securely by interlocks between systems.

One significant attractive features of this patent implementation is the ability to work simultaneously within a multi-tenet, distributed-relational environment in which there may be several simultaneous accesses by clinicians or physicians to a given patient record. This is one of the key features of the PW*e*R system that would not be easily addressed by a conventional blockchain process that requires discretized record locking/unlocking. Such a schema would be unworkable with a multi-tenant database in which multiple, simultaneous access to an individual record is allowed such as in PW*e*R. This patent resolves this multi-tenant, simultaneous record read/write access issue which is a unique and highly desirable feature of the PW*e*R system.

A "handshake" verification, validation and authorization process occur in fractions of a second, then releases the FHIR interoperability data to be exchanged through the various APIs and other "resource" packets to ensure a new patient record, or an updated patient record, is transferred within the blockchain "conduit" that provides both integrity and security of the data record from beginning to end.

The concept is fully scalable from two machines locally connected or part of a complex organization of systems connected through the internet that may be halfway around the globe with thousands of participants.

Biotech, Pharmaceutical and Research Use Cases

The system in the following panel 400a, associates a secure and unique Blockchain value (416) with a de-identified records base (412). As such, the database is compliant with HIPPA, yet links to the identified information with secure owner blockchain tags.

Depending on how the data is to be used, it may be provided in part, or whole - on a loan or a lease basis. For example, a research group may pay with tokens to filter the (pre-deidentified) data for the selection of trial participants. Perhaps a new drug or process has achieved high "Meaningful Use" marks against a disease and potential new care plans and therapies can be immediately associated to select patients. Likewise, a talented surgeon or group may be selected for a critical operation.
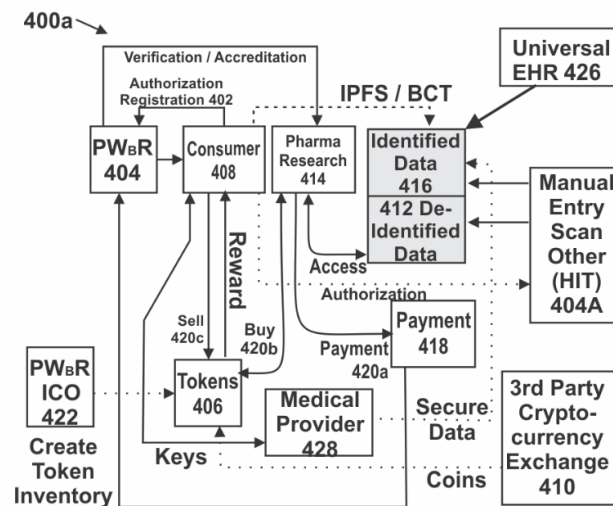
Example in the system of 400a

Consumers may be selected, where appropriate, and secure contact would be provided for "Right to Try" e.g., to volunteer to possibly experimental drugs or improved therapies and procedures. Perhaps the data is valuable for tailoring marketing, or advertising, strategies and the data might only be provided generally in a deidentified manner and purchased with tokens. Given that the data is pertinent to human needs all over the globe, there is the provision for international token pricing, privacy and security controls (410) as required by varying laws across the globe.

Other Use Cases for the Patent

In addition, there are a myriad of uses, for the patents that are not restricted to healthcare, that are available and addressable through the claims approved by the USPTO. The same basic concept of secure tagging of de-identified data could be useful in legislative, government, intelligence or homeland security, military, public safety, law enforcement, human resource, supply chain management, shipping manifests and other customs documents, and educational applications.

OXIO is investigating the addition of a digital token to the medical and healthcare blockchain through it's Personal Wellness *Blockchain* Record (PW*B*R®) portfolio company, which will allow the patient to have full autonomy over their medical records as to who uses and sees their medical

data. The addition of the token to the process would allow a legitimate research organization to identify certain data elements that align with their research objectives and petition to purchase the use of the data via the digital currency exchange (to be created by OXIO). This allows any patient or consumer, that is a part of the PW*B*R platform from anywhere in the world, to authorize the use of their deidentified medical data and be paid for its use. Today, the individual consumers medical data is essentially taken without consent, albeit deidentified, and sold on the market to the highest bidder. At OXIO, we believe the medical record data belongs to the patient and the patient should be able to approve or deny the use of their data, and if approved, receive reasonable compensation.

Carl L. Larsen, President of OXIO stated, "There are many high value avenues and paths this patent can take us; however, today we are concentrating on the application of the "Secure Transmission of Electronic Health Records via Blockchain." The vision of our management team remains highly focused on the 3-Pillars of our healthcare "ecosystem" and driving toward our goal of $1B revenue run-rate in six (6) years."

About OXIO Health®, Inc.

OXIO Health, Inc. is a new, multifaceted healthcare innovations company that realized medical care and medical technology had to be merged into a new, 21st century platform, to bring more value and improve quality; much of which still remains elusive in healthcare today. OXIO management brings deep, hands on experience in working for over 30-years in nearly every segment of healthcare delivery, technology, and facilities. Healthcare in the U.S. today is a US$4 trillion industry with expectation to reach over U.S. $6 trillion by 2030, as 10,000 new baby boomers reach retirement age daily through this period. We have assembled the best systems in our Portfolio of Companies designed and driven to be change agents in this industry that has resisted change for 50 years. However, Lessons-Learned from the COVID-19 pandemic have made patients, providers and payors receptive to these needed changes in the delivery of care.

For more information on OXIO Health, Inc. visit www.oxiohealth.io
United States of Healthcare Blogs: https://oxiohealth.io/blog/
Healthcare 2030 Podcasts: https://oxiohealth.io/podcasts/

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