

WHITEPAPER

V1.0

i. Abstract

The new decentralized and distributed internet networks have definitely changed our personal, social and economic relationships and if we are connected through our email accounts, through centralized social networking profiles, why can't we be connected pear to pear, without intermediaries, making exchanges, storing our information in a proprietary, inviolable, safe and distributed way?

In order to reverse the current logic and offer unrestricted access to health in an abundant, democratic and inclusive way, we would like to offer to society a technological tool capable of generating abundance of health resources, in which the individual and his relation and interaction with the another, society and nature will be able to provide concrete solutions to a healthy life.

Thus, My Health Data is born, with the purpose of constructing a system where patient is the sole detector of his/ her data, a system which enables not only unified repository, but, above all, ease of access and portability, once the information holder is the user and not the third party.

ii Contents

This document is structured in 4 parts:

1. Manifesto: For idealists. It diagnoses the social economic context and defends a paradigm shift of empowerment of the protagonist patient.

2. Presentation and contextualization of the problem that wants to be solved through the platform.

· Information silos;

· Interoperability;

 \cdot Asymmetry of information.

3. DAO: Why is My Health Data born with a vocation to be a DAO?

4. Architecture and interaction flows with Smart Contract.

5. Proposed solution to the problem.

iii. Background

Valeria Queiroz - <u>https://www.linkedin.com/in/valeria-queiroz-92298174/</u> Jeff Prestes - <u>https://www.linkedin.com/in/jeffprestes/</u> Marcela Gonçalves - <u>https://www.linkedin.com/in/marcelargoncalves/</u> Leonardo Aguiar - <u>https://www.linkedin.com/in/drleonardoaguiar/</u> Iris Burger - <u>https://www.linkedin.com/in/irisburger/</u>

1. Manifesto

CONNECTING PEOPLE, IMPROVING HEALTH

The main purpose of technologies is to improve human life and the environment around us. However, the society insists on segmenting classes and, by the manipulation of the resources scarcity, which should be abundant, limit the individual and collective rights and freedoms, and, as consequence, we are faced with the reduction in the life quality and the perspectives of the future of populations.

In order to reverse this logic and offer unrestricted access to health in an abundant, democratic and inclusive way, we would like to offer to the society a technological tool capable of generating abundance of health resources, where the individual and his relation and interaction with the other, society and nature will be able to provide concrete solutions to a healthy life.

Using the Blockchain technology, we invite everyone, through our interactions, to create a health data network, in which we will be the agents capable of generating solutions, which bases should be:

1. Empowerment of people, where the individual is not the patient, but the agent, the generator and the owner of their information;

2. User centralized data generation capable of providing the network with reliable and faithful information;

3. Generation and transmission of consistent information, capable of assisting in medical, pharmaceutical and wellness research and remunerating the parties involved;

4. Creation of an "anti-fragile" system, supported by multiple nodes of the network, encryption, anonymity and database not corruptible and, at the same time, generic capable of adapting to multiple situations, people and cultures easily;

5. User-focused solution, in which the Individuals will always be at the forefront of institutions, whether they are governments or for-profit entities.

In short, the agentes information flows will be able to produce, transmit and generate the social capital of a health built by all.

1.1 Legacy.

By idealizing My Health Data, our great aspiration was to leave as a legacy to society a truly democratic and inclusive tool in which citizens' data belonged not to any entity, but to themself, making those citizens independent and empowered to make make use of their information in the way it suits them best, furthermore, beyond the human aspect, since we are not separate from the environment, but part of this ecosystem, it would also enable the reduction of the waste of natural resources, since there will be an effective reduction of repeated exams and waste of materials.

2. Definition and contextualization of the problem

Electronic medical records were not designed to work in an integrated manner, nor were stored for the entire life of the patient (Ekblaw et al, 2016). They are fragmented in medical clinics, hospitals, doctors' offices of different specialties, laboratories, configuring the informational silos. This concept is used when there is no data sharing (MILLER; TUCKER, 2014). Akerlof (1970) created the concept of information asymmetry. In this, he reveals the problems that may arise from markets characterized by asymmetric information, in which there is an imbalance of access to information between buyers and sellers. When we bring this same concept to the health field, where service providers practice the average cost to the patient, this asymmetry can generate high costs for healthier patients. They no longer support those costs and, no longer subsidizing the cost of health of less healthy patients, the cost of health of these patients increases. In order to protect themselves from this negative impact, health care providers begin to standardize patient practices, overburdening patients and the system with often unnecessary information and treatments. (Cardon and Hendel, 2001)

In order to solve part of this asymmetry problem, we understand that by making the patient the sole and exclusive owner of your medical data, expensive, sometimes redundant, exams and procedures become unnecessary. The concept of patient empowerment through health information, Batchelor et al. (2015) from a perspective of a patient-centered health model.

Using Ethereum's Blockchain technology, we idealized a platform that consists of a smart contract that not only validates operations, but also stores and creates a patient-centered health data network that can be used in a variety of applications such as academics surveys, hospitals, laboratories and the pharmaceutical industry.

2.1 Health Silos

In an ethnographic study in three ICUs from different hospitals, Leslie et al. (2017), researched silos under the social, spatial and data aspects. In this, he observed that professionals from various areas tend to focus on the data that are relevant to their functions: nurses record data in one place, social workers in another and doctors in another different. And they tend to read only the data that their paradigms write. A nurse reported in an interview that a doctor would never read the data she writes. Also a social worker said that a doctor made her a request, however that she had already put in the system for a long time.

An informational silo is a system that does not exchange data with other similar systems (Miller and Tucker, 2014). The authors believe that one of the fears of hospitals, which leads them to create the information silos, may be the fact that the facilitation of data flow, could lead them to lose patients, who, with information, can look for other hospitals that could offer more convenience and better insurance costs. There are three suggestive evidences of strategic motivations that they found to explain the fears of losing patients, two of which are relevant to us. The first is a negative relationship between the size of the hospital system and the exchange of external information between hospitals that have health insurance plans, facilitating the patient's withdrawal since it is likely that the patient will seek treatment elsewhere, information that may lead you to this decision. The second is that specialized hospitals are less likely to share data with others outside their system.

Silos are very harmful not only to patients, but also to doctors and healthcare system. Very common scenarios that occur in hospitals, doctors' offices or other health professionals are when a patient comes unconscious to the prompt care of a hospital, or when one goes to the doctor who accompanies him a few days after being attended in the emergency or when consulting a new physician and this has no history of the patient (ADLER; HARPER; HOYT, 2010). Patient information is fragmented in the health system. There is no sharing of information. There is also no history, which is very important especially in the case of chronic patients. The doctor works with incomplete information and often asks for unnecessary exams already done. And the information in the silos is not easily within reach of the patient because it is stored locally. There is a very large bureaucracy when he asks for his medical records, despite being protected in Brazil by article 72 of the Consumer Protection Code and also by article 88 of the Code of Medical Ethics.

There are several obstacles that prevent the breakdown of these silos and the sharing of information among health professionals. Among them article 73 of the Code of Medical Ethics, which prohibits the doctor from public disclosure or third parties of medical records. In addition, there are other factors that are directly impacted by the creation of these silos, such as interoperability and information asymmetry.

2.2 Interoperability

In the 1990s, with electronic health records (RES) showing their efficiency and quality, there was still the problem of information in silos being solved. This information is disorganized and stored in various formats: office files, vaccination portfolios and, when digitized, they are in the most diverse file formats making it practically impossible to trace a history of patients and the exchange of information with other health professionals . The key to this obstacle is the interoperability of medical records. It also addresses the problems of longitudinal data analysis and patient follow-up during health care stages. Record standards are required for consistent patient identification and data security. In addition, the standardization generated by interoperability can provide various facilities in the systems, such as electronic prescription of drugs, integration of laboratory test results and many other features. (KUPERMAN, 2011).

For an emergency department doctor in the state of New Jersey, in the United States, despite the investment in software for interoperability, only 5% of patients have complete registration. For him, interoperability is a big problem because it can make patient care much better (BURNS, 2016). Moreira et al. (2018), also believes that interoperability will increase the quality of the health services provided, in addition to reducing the high costs. Different databases require integration. This is one of the biggest challenges in medical computing, as patient data are spread across different sites and in diverse hardware and software.

As we have seen, interoperability is nothing more than the ability of information systems to work together and share information inside and outside organizational boundaries. From a health care technology perspective, it specifically involves: information exchange, infrastructure interoperability, user interface interoperability, and process interoperability (GLASER, 2011).

The patient, however, does not have access to all of this information when he needs it most when he is sick. This decentralization, lack of interoperability and lack of control over health information causes a fact known as asymmetry of information. Health professionals have control based on this concept, since they have the information in greater quantity and quality than the patients themselves.

2.3 Asymmetry of Information

In coining the concept of asymmetry, Akerlof (1970) used the American car market to exemplify it. "There are new cars and used cars. There are good cars and bad cars (known in America as "lemons"). A new car can be a good car or a lemon, and certainly the same is true for used cars "(AKERLOF 1970: 489). When buying a car you can not know if it is good or a pineapple, Portuguese version of the English term lemon, until after a period of time. With data from multiple cars, sellers have more information than buyers, with information asymmetry occurring, which leads them to have a greater advantage in the market than these.

In the study by Bloom et al. (2008, p.2077), he acknowledges that

Asymmetries are seen to penetrate health markets, which are characterized by high levels of uncertainty. For example, patients may be able to describe their symptoms, but they have inadequate information to relate their condition to a particular type of treatment and course of medication. This creates an unequal power relationship between specialists and patients where the former can explore in their own interest.

Informational asymmetry is generally understood to mean that "the supplier has more information about the subject of an exchange (eg a product or service) than the buyer" (MISHRA et al., 1998, p277). Changes in the knowledge economy have emphasized the need to understand how people evaluate the reliability of information sources, as access to them alone is not enough. "This is highly relevant to health-related issues where it has long been recognized that the problems of information asymmetry - where the provider has an inherent advantage over the user - make issues of trust particularly important" (BATCHELOR et al., 2015, p.8109).

In many researches we see trust, in its different dimensions, as essential in functional relations:

at different levels of health systems through the establishment of shared norms and values, reputation and legitimacy. We focus particularly on trust in the context of the problem of information asymmetry as that which is at the heart of many of the institutional arrangements found in the health sector. In light of the increasing commodification, consumerism and technological changes in the health sector, we speculate that the role played by information asymmetries is changing in low- and middle-income countries as well as in the rich and may be shrinking in some types of transactions with changes in the ways in which access to the knowledge economy in health is mediated (BLOOM; STANDING; LLOYD, 2008, p.2085).

3. The DAO

From a concept introduced by Blockchain Hub in its publication "What is a DAO?", The DAO (Decentralized Autonomous Organization) can be one of the most complex forms of smart contract, where the statutes of centralized organizations are applied in codes of smart contracts, using complex rules of governance through tokens. "

The concept of decentralized organization itself already carries with it a whole disruptive framework, insofar as it breaks with the traditional hierarchical territorial structure. In its place, a new organization, neither hierarchical nor horizontal, comes into play, but a structure governed by the flow of network interactions and permeated by the governance rules of this network.

Because it is a platform totally geared to meet the needs of access to health information of the individual, regardless of nationality or social class, where the individual will be responsible and holder of his/ her own information, My Health Data is born with the vocation of DAO, is born with the vocation to become the property of anyone who interact in it, whether as developers or users.

4. Architecture

In order to be as universal as possible, My Health Data is not intended to be *the front end* of the patient's interface, but the basis on which any entity, independent of the country, can develop its application in an open and non-costly way. With this purpose, local partnerships will be developed in several countries and regions to create screens that will interact with Smart Contract, which can respect local medical needs and cultures and, thus, have a unique usability for their users. In this way, we can mention, as an example, a support group for leprosy patients in India that would create screens and a flow to interact with our Smart Contract that make sense to this community, respecting their customs, ethnicities.

To connect to MyHealthData Smart Contract, simply connect to an Ethereum network node, Infura for example, and use the free software JavaScript libraries Web3 or etherjs, to name a few. There are free software libraries for other languages and platforms that could also be used.

4.1 Flows of interaction with MyHealthData Smart Contract



Master Account Creation

Patient and Third Part Registration



Use - Third Part reading and writing permission







Use - Patient or Third Part inserts media



Use - Delete Data



Sell – Enter Price, Removing Sales List and Selling Record







5. **Proposed solution**

In this way, My Health Data proposes, through the empowerment of the patient, making them the sole owner of their medical data, solving the above mentioned problems of information silos, interoperability and asymmetry of information, having developed, for that purpose, a smart contract, published in the blockchain Ethereum network, which is capable of providing a patient-centered medical data repository system, having as primary key its Ethereum account.

The My Health Data smart contract has been structured in a way that any entity can develop applications on it, as long as the information is always stored under this primary key and with the permission of the key owner (the patient). Thus, the system, based on the patient's permissions, as described above, controls access to medical records, permits the inclusion, removal and reading of medical records by the patient or third parties, makes the sale of such data available to third parties, where negotiation is done directly between interested parties, but always preserving the identity and anonymity of those who make them available.

Our purpose and commitment is to help people around the world keep their medical records safe and, when needed, use them for their own health care, in a way to be able to do it in the best and least time as possible. Likewise, we are committed to assisting international medical research and the relentless pursuit of disease cures, through the voluntary sharing of medical data for research on new treatments and medications.

References

ADLER, Kenneth; HARPER, Rick; HOYT, Robert. Bridging The Gap: electronic health information exchanges could eliminate the silos of information and improve care. **Medical Economics**. p. 52-56, dez. 2010.

AKERLOF, George. The Market for Lemons: quality uncertainty and the market mechanism. **The Quarterly Journal of Economics**. v. 84, n. 3, p. 488-500, ago. 1970.

BATCHELOR, Simon; WALDMAN, Linda; BLOOM, Gerry; RASHEED, Sabrina; SCOTT, Nigel; AHMED, Tanvir; KHAN, Nazib U. Z.; SHARMIN, Tamanna. Understanding Health Information Seeking from an Actor-Centric Perspective. **International Journal of Environmental Research and Public Health**. v. 12, p. 8103-8124, jul. 2015.

BLOOM, Gerard; STANDING, Hilary; LLOYD, Robert. Markets, information asymmetry and health care: towards new social contracts. **Social Science & Medicine**. v.66, n. 10, p. 2076-2087, mai, 2008.

BURNS, Joseph. EHR Interoperability's Uncertain Future. Medical Economics. p. 48-54, out. 2016.

CARDON, James H; HENDEL, Igal. Asymmetric information in health insurance: evidence from the National Medical Expenditure Survey. **RAND Journal of Economics**. v.32, n. 3. p. 408-427, fev. 2001.

EKBLAW, Ariel et al. A Case Study for Blockchain in Healthcare: "MedRec" prototype for electronic health records and medical research data. In: *IEEE Open & Big Data Conference*, 2, 2016 *W*

2., 2016, Viena. Anais... v. 13, p. 13.

GLASER, John. Interoperability: the key to break down silos in health care. **Healthcare Financial Management**. p. 44-50, nov. 2011.

KUPERMAN, GILAD J.; Health-information exchange: why are we doing it,

and what are we doing? Journal of the American Medical Informatics Association. v. 18, p. 678-682, set. 2011.

LESLIE, Myles et al. An Ethnographic Study of Health Information Technology Use in Three Intensive Care Units. **Health Services Research**. v. 52, n. 4, p. 1330-1348, ago. 2017.

MILLER, Amalia R.; TUCKER, Catherine. Health information exchange, system size and information silos. **Journal of Health Economics**.v. 33, p. 28-42, jan. 2014

MISHRA, Debi P.; HEIDE, Jan. B.; CORT, Stanton J. Information Asymmetry and Levels of Agency Relationships. **Journal of Marketing Research**. v. 35, n. 3, p. 277–295, ago. 1998.

MOREIRA, Mário W.L. et al. Semantic interoperability and pattern classification for a

service-oriented architecture in pregnancy care. Future Generation Computer Systems. v. 89, p. 137–147, jun. 2018.

What is a DAO? Disponível em <u>https://blockchainhub.net/dao-decentralized-autonomous-organization/</u>. Acesso em 27 out. 2018.

ABI (application binary interface) to carry out operations with Smart Contract:

[{"constant":true,"inputs":[{"name":"_pacientAddress","type":"address"},{"name":"_recordId","type":"ui nt32"}],"name":"getPatientRecordDetails","outputs":[{"name":"","type":"bytes10"},{"name":"","type":"st ring"},{"name":"","type":"uint256"},{"name":"","type":"string"},{"name":"","type":"string"},{"name":"" ,"type":"bool"},{"name":"","type":"bool"},{"name":"","type":"string"},{"name":"","type":"string"}],"pa yable":false,"stateMutability":"view","type":"function"},{"constant":false,"inputs":[{"name":"_acct"," type":"address"},{"name":"_name","type":"string"},{"name":"_country","type":"string"}],"name":"newThir dPartyIssuer","outputs":[{"name":"success","type":"bool"}],"payable":false,"stateMutability":"nonpayab le","type":"function"},{"constant":true,"inputs":[{"name":"","type":"address"}],"name":"thirdPartyIssu ersAvailable", "outputs": [{"name": "name", "type": "string"}, {"name": "country", "type": "string"}, {"name": "e xists","type":"bool"}],"payable":false,"stateMutability":"view","type":"function"},{"constant":true,"i nputs":[{"name":"_orderID","type":"uint248"}],"name":"getRecordOrderDetails","outputs":[{"name":"reque ster","type":"address"},{"name":"purpose","type":"string"},{"name":"recordId","type":"uint248"},{"name ":"accepted","type":"bool"},{"name":"valuePaid","type":"uint256"},{"name":"reqName","type":"string"},{ "name":"reqEmail","type":"string"}],"payable":false,"stateMutability":"view","type":"function"},{"cons tant":false,"inputs":[{"name":"_recordId","type":"uint248"},{"name":"_purpose","type":"string"},{"name ":"_reqName","type":"string"},{"name":"_reqEmail","type":"string"}],"name":"askToBuy","outputs":[{"nam e":"newID","type":"uint248"}],"payable":true,"stateMutability":"payable","type":"function"},{"constant ":true,"inputs":[{"name":"_orderId","type":"uint248"}],"name":"getRecordSoldDetails","outputs":[{"name ":"", "type":"string"}], "payable":false, "stateMutability":"view", "type":"function"}, {"constant":false," inputs":[{"name":"_recordId","type":"uint32"}],"name":"deleteRecord","outputs":[{"name":"","type":"boo 1"}],"payable":false,"stateMutability":"nonpayable","type":"function"},{"constant":false,"inputs":[{"n ame":"_pacientAddress","type":"address"},{"name":"_recordId","type":"uint32"},{"name":"_mediaUrl","typ e":"string"},{"name":"_externalIssuer","type":"address"}],"name":"addMediaToRecord","outputs":[{"name" :"success", "type":"bool"}], "payable":false, "stateMutability":"nonpayable", "type":"function"}, {"constan t":true,"inputs":[{"name":"_pacientAddress","type":"address"}],"name":"getTotalPatientRecords","output s":[{"name":"","type":"uint32"}],"payable":false,"stateMutability":"view","type":"function"},{"constan t":true,"inputs":[{"name":"_recordId","type":"uint248"}],"name":"getRecordSellable","outputs":[{"name" :"patient","type":"address"},{"name":"recordCategoryCode","type":"bytes10"},{"name":"price","type":"ui nt256"},{"name":"stillSellable","type":"bool"}],"payable":false,"stateMutability":"view","type":"funct ion"},{"constant":false,"inputs":[{"name":"_code","type":"bytes10"},{"name":"description","type":"stri ng"}],"name":"newRecordCategory","outputs":[{"name":"status","type":"bool"}],"payable":false,"stateMut ability":"nonpayable","type":"function"},{"constant":false,"inputs":[{"name":"_acct","type":"address"} ,{"name":"_dateOfBirth","type":"string"},{"name":"_genderOfBirth","type":"string"},{"name":"_cityOfBir th","type":"string"},{"name":"_countryOfBirth","type":"bytes2"},{"name":"_ethnicity","type":"string"}] ,"name":"newPatient","outputs":[{"name":"status","type":"bool"}],"payable":false,"stateMutability":"no npayable","type":"function"},{"constant":false,"inputs":[{"name":"_pacientAddress","type":"address"},{ "name":"_recordCategoryCode","type":"bytes10"},{"name":"_dateOfFact","type":"string"},{"name":"_detail s","type":"string"},{"name":"_externalIssuer","type":"address"}],"name":"newRecord","outputs":[{"name" :"", "type":"uint256"}], "payable":false, "stateMutability":"nonpayable", "type":"function"}, {"constant":f alse,"inputs":[{"name":"_recordId","type":"uint32"}],"name":"makeRecordNotSellable","outputs":[{"name" :"", "type":"bool"}], "payable":false, "stateMutability":"nonpayable", "type":"function"}, {"constant":true ,"inputs":[],"name":"totalRecordCategories","outputs":[{"name":"","type":"uint256"}],"payable":false," stateMutability":"view","type":"function"},{"constant":false,"inputs":[{"name":"_orderID","type":"uint 248"},{"name":"_recordDetails","type":"string"}],"name":"sell","outputs":[{"name":"","type":"bool"}]," payable":true,"stateMutability":"payable","type":"function"},{"constant":false,"inputs":[{"name":"_acc t","type":"address"}],"name":"allowIssuers","outputs":[{"name":"","type":"bool"}],"payable":false,"sta teMutability":"nonpayable","type":"function"},{"constant":true,"inputs":[{"name":"_code","type":"bytes 10"}], "name": "getRecordCategory", "outputs": [{"name": "code", "type": "bytes10"}, {"name": "description", "ty pe":"string"}],"payable":false,"stateMutability":"view","type":"function"},{"constant":false,"inputs": [{"name":"_acct","type":"address"}],"name":"removeIssuers","outputs":[{"name":"","type":"bool"}],"paya ble":false,"stateMutability":"nonpayable","type":"function"},{"constant":false,"inputs":[{"name":"_rec ordId","type":"uint32"},{"name":"_price","type":"uint64"}],"name":"makeRecordSellable","outputs":[{"na me":"newID","type":"uint248"}],"payable":false,"stateMutability":"nonpayable","type":"function"},{"con stant":true,"inputs":[{"name":"_acct","type":"address"}],"name":"getPatientDetails","outputs":[{"name" :"dateOfBirth","type":"string"},{"name":"genderOfBirth","type":"string"},{"name":"cityOfBirth","type": "string"},{"name":"countryOfBirth","type":"bytes2"},{"name":"ethnicity","type":"string"}],"payable":fa

lse,"stateMutability":"view","type":"function"},{"constant":true,"inputs":[],"name":"recordSellableId" ,"outputs":[{"name":"","type":"uint248"}],"payable":false,"stateMutability":"view","type":"function"}, {"constant":true,"inputs":[],"name":"recordOrderId","outputs":[{"name":"","type":"uint248"}],"payable" :false,"stateMutability":"view","type":"function"},{"inputs":[{"name":"_devContract","type":"address"}],"payable":true,"stateMutability":"payable","type":"constructor"},{"anonymous":false,"inputs":[{"inde xed":false,"name":"_patient","type":"address"},{"indexed":false,"name":"_value","type":"uint256"},{"in dexed":false,"name":"_recordOrderId","type":"uint248"}],"name":"NewRecordBuyed","type":"event"},{"anon ymous":false,"inputs":[{"indexed":false,"name":"purpose","type":"string"},{"indexed":false,"name":"val ueOffered", "type":"uint256"}, {"indexed":false, "name":"_recordOrderId", "type":"uint248"}], "name":"NewOr der", "type": "event" }, {"anonymous": false, "inputs": [{"indexed": false, "name": "category", "type": "bytes10"} ,{"indexed":false,"name":"price","type":"uint256"},{"indexed":false,"name":"recordSellableId","type":" uint248"}],"name":"NewRecordAvailableToBuy","type":"event"},{"anonymous":false,"inputs":[{"indexed":fa lse,"name":"patient","type":"address"},{"indexed":false,"name":"recordId","type":"uint32"}],"name":"Ne wRecordToPatient", "type":"event"}, {"anonymous":false, "inputs":[{"indexed":false, "name":"patient", "type ":"address"},{"indexed":false,"name":"recordId","type":"uint32"}],"name":"NewMediaToPatientRecord","ty pe":"event"},{"anonymous":false,"inputs":[{"indexed":false,"name":"code","type":"bytes10"}],"name":"Ne wCategory", "type":"event"}, {"anonymous":false, "inputs":[{"indexed":false, "name": "parter", "type":"addre ss"}],"name":"NewThirdPartyIssuer","type":"event"},{"anonymous":false,"inputs":[{"indexed":false,"name ":"patientAddress","type":"address"}],"name":"NewPatient","type":"event"}][{"constant":true,"inputs":[{"name":"_pacientAddress","type":"address"},{"name":"_recordId","type":"uint32"}],"name":"getPatientRe
cordDetails","outputs":[{"name":"","type":"bytes10"},{"name":"","type":"string"},{"name":"","type":"ui nt256"},{"name":"","type":"string"},{"name":"","type":"string"},{"name":"","type":"bool"},{"name":""," type":"bool"},{"name":"","type":"string"},{"name":"","type":"string"}],"payable":false,"stateMutabilit y":"view","type":"function"},{"constant":false,"inputs":[{"name":"_acct","type":"address"},{"name":"_n ame", "type":"string"}, {"name":"_country", "type":"string"}], "name": "newThirdPartyIssuer", "outputs":[{"n ame":"success","type":"bool"}],"payable":false,"stateMutability":"nonpayable","type":"function"},{"con stant":true,"inputs":[{"name":"","type":"address"}],"name":"thirdPartyIssuersAvailable","outputs":[{"n ame":"name","type":"string"},{"name":"country","type":"string"},{"name":"exists","type":"bool"}],"paya ble":false,"stateMutability":"view","type":"function"},{"constant":true,"inputs":[{"name":"_orderID"," type":"uint248"}],"name":"getRecordOrderDetails","outputs":[{"name":"requester","type":"address"},{"na me":"purpose","type":"string"},{"name":"recordId","type":"uint248"},{"name":"accepted","type":"bool"}, {"name":"valuePaid","type":"uint256"},{"name":"reqName","type":"string"},{"name":"reqEmail","type":"st ring"}],"payable":false,"stateMutability":"view","type":"function"},{"constant":false,"inputs":[{"name ":"_recordId","type":"uint248"},{"name":"_purpose","type":"string"},{"name":"_reqName","type":"string" },{"name":"_reqEmail","type":"string"}],"name":"askToBuy","outputs":[{"name":"newID","type":"uint248"}],"payable":true,"stateMutability":"payable","type":"function"},{"constant":true,"inputs":[{"name":"_o rderId","type":"uint248"}],"name":"getRecordSoldDetails","outputs":[{"name":"","type":"string"}],"paya ble":false,"stateMutability":"view","type":"function"},{"constant":false,"inputs":[{"name":"_recordId" ,"type":"uint32"}],"name":"deleteRecord","outputs":[{"name":"","type":"bool"}],"payable":false,"stateM utability":"nonpayable","type":"function"},{"constant":false,"inputs":[{"name":"_pacientAddress","type ":"address"},{"name":"_recordId","type":"uint32"},{"name":"_mediaUrl","type":"string"},{"name":"_exter nalIssuer", "type": "address"}], "name": "addMediaToRecord", "outputs": [{"name": "success", "type": "bool"}]," payable":false,"stateMutability":"nonpayable","type":"function"},{"constant":true,"inputs":[{"name":"_ pacientAddress","type":"address"}],"name":"getTotalPatientRecords","outputs":[{"name":"","type":"uint3 2"}],"payable":false,"stateMutability":"view","type":"function"},{"constant":true,"inputs":[{"name":"_ recordId","type":"uint248"}],"name":"getRecordSellable","outputs":[{"name":"patient","type":"address"} ,{"name":"recordCategoryCode","type":"bytes10"},{"name":"price","type":"uint256"},{"name":"stillSellab le","type":"bool"}],"payable":false,"stateMutability":"view","type":"function"},{"constant":false,"inp uts":[{"name":"_code","type":"bytes10"},{"name":"description","type":"string"}],"name":"newRecordCateg ory", "outputs": [{"name": "status", "type": "bool"}], "payable": false, "stateMutability": "nonpayable", "type" :"function"},{"constant":false,"inputs":[{"name":"_acct","type":"address"},{"name":"_dateOfBirth","typ e":"string"},{"name":"_genderOfBirth","type":"string"},{"name":"_cityOfBirth","type":"string"},{"name" :"_countryOfBirth","type":"bytes2"},{"name":"_ethnicity","type":"string"}],"name":"newPatient","output s":[{"name":"status","type":"bool"}],"payable":false,"stateMutability":"nonpayable","type":"function"} ,{"constant":false,"inputs":[{"name":"_pacientAddress","type":"address"},{"name":"_recordCategoryCode" ,"type":"bytes10"},{"name":"_dateOfFact","type":"string"},{"name":"_details","type":"string"},{"name": "_externalIssuer","type":"address"}],"name":"newRecord","outputs":[{"name":"","type":"uint256"}],"paya ble":false,"stateMutability":"nonpayable","type":"function"},{"constant":false,"inputs":[{"name":"_rec ordId","type":"uint32"}],"name":"makeRecordNotSellable","outputs":[{"name":"","type":"bool"}],"payable ":false,"stateMutability":"nonpayable","type":"function"},{"constant":true,"inputs":[],"name":"totalRe cordCategories","outputs":[{"name":"","type":"uint256"}],"payable":false,"stateMutability":"view","typ e":"function"},{"constant":false,"inputs":[{"name":"_orderID","type":"uint248"},{"name":"_recordDetail s","type":"string"}],"name":"sell","outputs":[{"name":"","type":"bool"}],"payable":true,"stateMutabili ty":"payable","type":"function"},{"constant":false,"inputs":[{"name":"_acct","type":"address"}],"name"

:"allowIssuers","outputs":[{"name":"","type":"bool"}],"payable":false,"stateMutability":"nonpayable"," type":"function"},{"constant":true,"inputs":[{"name":"_code","type":"bytes10"}],"name":"getRecordCateg ory","outputs":[{"name":"code","type":"bytes10"},{"name":"description","type":"string"}],"payable":fal se,"stateMutability":"view","type":"function"},{"constant":false,"inputs":[{"name":"_acct","type":"add ress"}],"name":"removeIssuers","outputs":[{"name":"","type":"bool"}],"payable":false,"stateMutability" :"nonpayable","type":"function"},{"constant":false,"inputs":[{"name":"_recordId","type":"uint32"},{"na me":"_price","type":"uint64"}],"name":"makeRecordSellable","outputs":[{"name":"newID","type":"uint248" }],"payable":false,"stateMutability":"nonpayable","type":"function"},{"constant":true,"inputs":[{"name ":"_acct","type":"address"}],"name":"getPatientDetails","outputs":[{"name":"dateOfBirth","type":"strin g"},{"name":"genderOfBirth","type":"string"},{"name":"cityOfBirth","type":"string"},{"name":"countryOf Birth","type":"bytes2"},{"name":"ethnicity","type":"string"}],"payable":false,"stateMutability":"view" ,"type":"function"},{"constant":true,"inputs":[],"name":"recordSellableId","outputs":[{"name":"","type
":"uint248"}],"payable":false,"stateMutability":"view","type":"function"},{"constant":true,"inputs":[] ,"name":"recordOrderId","outputs":[{"name":"","type":"uint248"}],"payable":false,"stateMutability":"vi ew","type":"function"},{"inputs":[{"name":"_devContract","type":"address"}],"payable":true,"stateMutab ility":"payable","type":"constructor"},{"anonymous":false,"inputs":[{"indexed":false,"name":"_patient" ,"type":"address"},{"indexed":false,"name":"_value","type":"uint256"},{"indexed":false,"name":"_record OrderId", "type": "uint248"}], "name": "NewRecordBuyed", "type": "event"}, { "anonymous": false, "inputs": [{"ind exed":false,"name":"purpose","type":"string"},{"indexed":false,"name":"valueOffered","type":"uint256"} ,{"indexed":false,"name":"_recordOrderId","type":"uint248"}],"name":"NewOrder","type":"event"},{"anony mous":false,"inputs":[{"indexed":false,"name":"category","type":"bytes10"},{"indexed":false,"name":"pr icc=","type":"uint256"},{"indexed":false,"name":"recordSellableId","type":"uint248"}],"name":"NewRecord AvailableToBuy", "type": "event"}, {"anonymous":false, "inputs": [{"indexed":false, "name": "patient", "type": "address"},{"indexed":false,"name":"recordId","type":"uint32"}],"name":"NewRecordToPatient","type":"ev ent"},{"anonymous":false,"inputs":[{"indexed":false,"name":"patient","type":"address"},{"indexed":fals e,"name":"recordId","type":"uint32"}],"name":"NewMediaToPatientRecord","type":"event"},{"anonymous":fa lse,"inputs":[{"indexed":false,"name":"code","type":"bytes10"}],"name":"NewCategory","type":"event"},{ "anonymous":false,"inputs":[{"indexed":false,"name":"parter","type":"address"}],"name":"NewThirdPartyI ssuer","type":"event"},{"anonymous":false,"inputs":[{"indexed":false,"name":"patientAddress","type":"a ddress"}],"name":"NewPatient","type":"event"}]

Smart contract of MyHealthData developers, investors and supporters: https://etherscan.io/address/0xc1538f136acb1bb615b849d229b1c4f7bdcfd19d