



HealthySELFIE

Store and verify health claims on the Ethereum blockchain

Patient-driven EMR with forward-looking consent management & interoperability via blockchain

Workflow

1. eHealth Wallet

2. Ethereum Blockchain

3. Health Data Stores

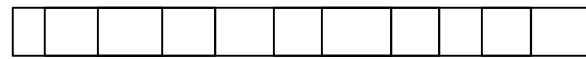
I. Populate Share data across family groups

Sister Sally

My EMR My Health ID
My Family My Doctors

Brother Bob

Father Fitz



IPFS

Smart Contract

1. uPort digital ID with "Patient" data attributes per schema.org
2. Request EMR data from health data stores populated to IPFS (Whisper PGP encryption)

3. Tierion HIPAA-compliant audit trail (Bitcoin blockchain)

East Clinic

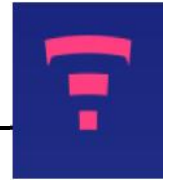
HL7 FIR standard EMR
Data: health conditions, allergies, medications

Live EMR data server, Epic, Argonaut Project, Wisconsin

West Clinic

HL7 FIR standard EMR
Data: genetic testing and forward-consent
Required by Precision Medicine Initiative

II. Verify Quick on-demand attestation look-up from eHealth Wallet to blockchain



Work flow example: Tierion HIPAA-compliant audit-trail

https://api.tierion.com/v1/records

POST ▼ https://api.tierion.com/v1/records Params Send

Authorization Headers (3) **Body** ● Pre-request Script Tests

form-data x-www-form-urlencoded raw binary JSON (application/json) ▼

```
1 - {
2   "datastoreId": 995,
3   "firstname": "Micky",
4   "lastname": "Mouse",
5   "emailaddress": "jonathan@transendx.com",
6   "url": "https://open-ic.epic.com/FHIR/api/FHIR/DSTU2/Condition?patient=Tbt3KuCY0B5PSrJvCu2j-P1K.aiHsu2xUjUM8bWpetXo8&category=
7 }
```

Pretty Raw Preview JSON ▼ ≡

```
1 - {
2   "id": "SoESVpiF0k2NkwWgflH1qw",
3   "accountId": 1558,
4   "datastoreId": 995,
5   "status": "queued",
6 - "data": {
7     "firstname": "Micky",
8     "lastname": "Mouse",
9     "emailaddress": "jonathan@transendx.com",
10    "url": "https://open-ic.epic.com/FHIR/api/FHIR/DSTU2/Condition?patient=Tbt3KuCY0B5PSrJvCu2j-P1K.aiHsu2xUjUM8bWpetXo8&category=diagnosis"
11  },
12  "json": "{\"firstname\":\"Micky\",\"lastname\":\"Mouse\",\"emailaddress\":\"jonathan@transendx.com\",\"url\":\"https://open-ic.epic.com/FHIR/D
13  \"sha256\": \"ece726bb0d6c17f007cc606593ac3cb597f07f8963a0f0b99373eca741306460\",
14  "timestamp": 1475388056
15 }
```



HealthySELFIE

Store and verify health claims on the Ethereum blockchain

Summary: Patient-driven EMR with forward-looking consent management, data liquidity via blockchain

Problem: Non-interoperable medical records

Market-ready for \$22 billion worldwide EMR market

- Revenue: service provider (Aetna, Cigna, Anthem) with EMR solution, remunerated patient-shared data
- Precision Medicine Initiative: share genetic/medical data across family groups

Interoperability/Shared Infrastructure

- HL7 FIR open data standard schema.org/Patient (standards-based unified EMR solution)

Use of Blockchain

- Ethereum blockchain smartcontracts
- uPort self-signed digital identity management system
- HIPAA-compliant audit log with Tierion

Technology Stack

- Ethereum blockchain smartcontracts, uPort, IPFS, Whisper; HL7 FIR Epic open EMR Argonaut Project

