

**University of Mumbai**

**HealthKard - Decentralized User Health Identity  
and Health Records Management with Web3, IPFS  
and the Ethereum Blockchain**

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**For the degree of  
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# User Manual for HealthKard

## Decentralized User Health Identity and Health Records Management with Web3, IPFs and the Ethereum Blockchain

Welcome to HealthKard, a blockchain-based platform that provides a secure and reliable way to manage your electronic health records (EHRs). This user manual will guide you through the various features of the platform and help you make the most of your HealthKard experience.

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## Patient's View

To get started with HealthKard, you will need to create an account on the platform. Follow the steps below to create your account:

1. Go to the HealthKard website and click on "Create HealthID". You will be redirected to the Create Health ID portal.

### HealthKard

#### A decentralized health framework

HealthKard is a next generation health care IT solution designed to help the patients store their health records on the blockchain.

- **Storage** - HealthKard becomes a decentralized and encrypted store for your medical records with the ability to allow approved entities like hospitals to access the reports and medical data.
- **Ease of Accessibility** - Login using MetaMask making blockchain adoption easy and seamless. It offers a universal Medical QR that can be used by health officials to instantly gauge and keep track of the patient's medical history.
- **Free and open source** - HealthKard is completely open source and decentralized at all layers of the stack making it easy to access and censorship-resistant.

Login

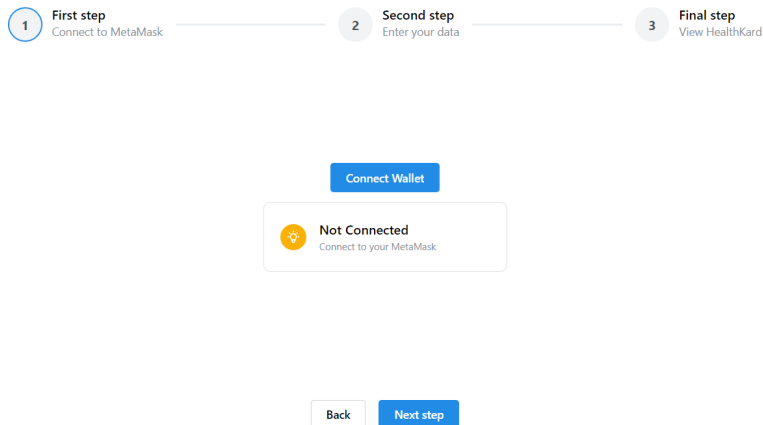
Create Health ID

Create Expert ID



[Fig 1: Landing Page]

2. Connect your wallet



[Fig 2: Connect Wallet]

3. Enter your personal information, such as your name, date of birth, and contact information.

✓  
First step  
Connect to MetaMask

2  
Second step  
Enter your data

3  
Final step  
View HealthKard

Full Name \*

Ada Lovelace

Date of birth \*

Pick date

Blood Group \*

B +ve

Gender \*

Male

Aadhar Number \*

832226145695

Phone Number \*

9820273593

Email \*

your@email.com

Drop passport size photo here

Back

Submit

[Fig 3: Patient Details]

4. Click on "Submit" to generate your unique Health ID.

✓ First step  
Connect to MetaMask

✓ Second step  
Enter your data


3 Final step  
View HealthKard

Aadhar Number \*

485148514851

Submit

HealthKard



Umang Thadani

Email

umang@gmail.com

Phone

9876543210

Aadhar No.

485148514851

Date of Birth

16/04/2002

Gender

Male

Blood Group

B -ve

OR

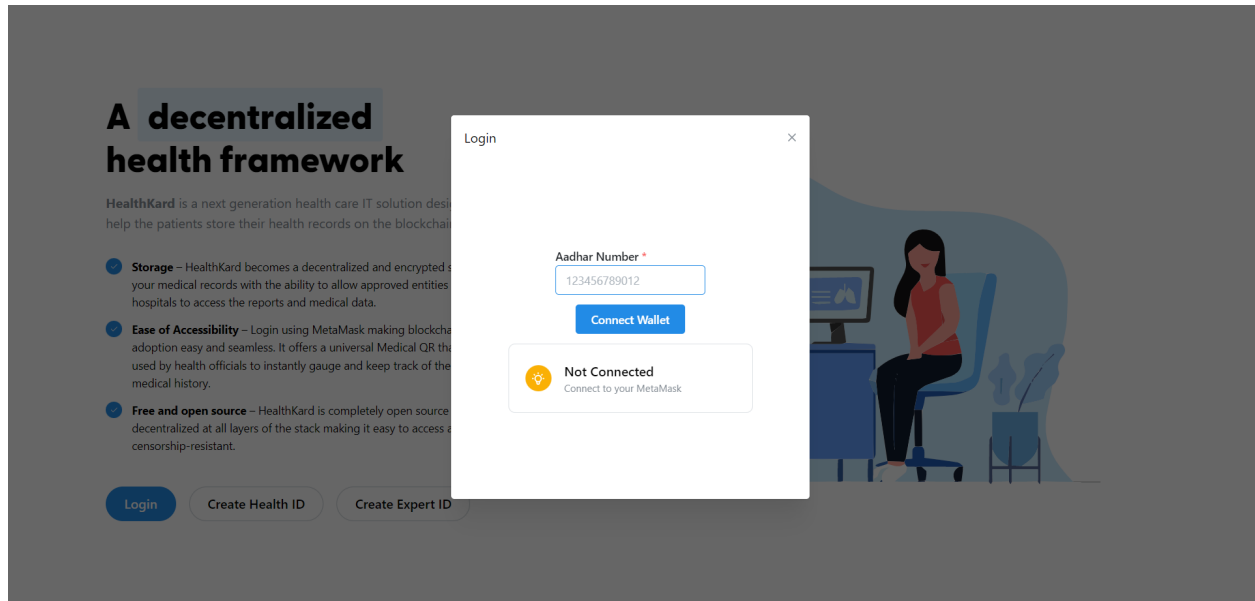
Go Back and Login to Manage Your EHRs

[Fig 4: Patient HealthKard]

## Managing your EHRs

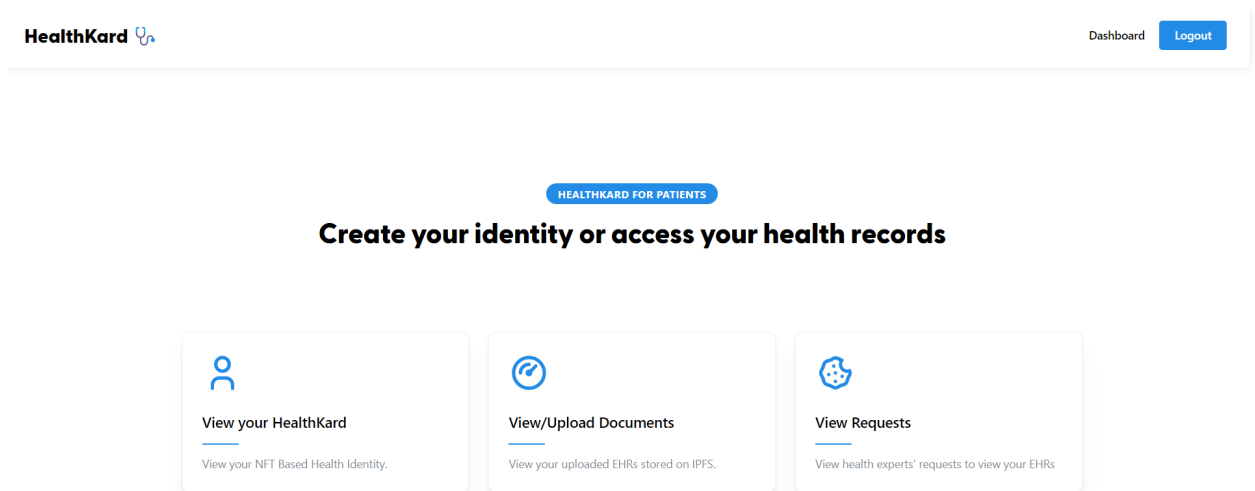
Once you have created your Health ID, you can start managing your EHRs on the HealthKard platform. Follow the steps below to manage your EHRs:

1. Login to the Dashboard by connecting your wallet



[Fig 5: Connect Wallet and Enter Aadhar]

2. Click on "View/Upload Documents" on the HealthKard Patient dashboard.



[Fig 6: Patient Dashboard]

3. Add your EHRs to the platform by uploading your medical records and entering your password.

## Upload new health record

Password \*

Upload Health Record \*

 Pick File

## View your health records

Document ID	IPFS URL
14a0d87574cd5627f0da...	<a href="https://bafybeidhjwophltuyizkgelig66bdrshhpeg4rny3xa7i2abqhd3ojtza.ipfs.w3s.link">https://bafybeidhjwophltuyizkgelig66bdrshhpeg4rny3xa7i2abqhd3ojtza.ipfs.w3s.link</a>

[View](#)

[Fig 7: Upload EHR]

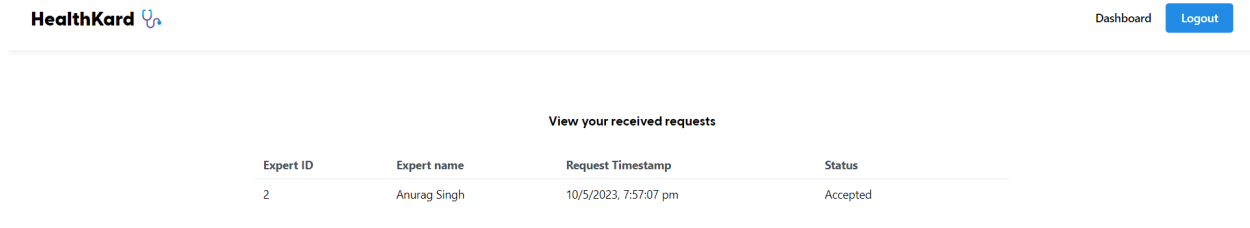
4. Review your EHRs to ensure that they are accurate and up-to-date.



## Sharing your EHRs

HealthKard allows you to share your EHRs with healthcare providers securely. Follow the steps below to share your EHRs:

1. Click on "View Requests" on the HealthKard dashboard. (refer Fig. 5)
2. Choose the Health Expert from the list of experts who have requested access for your EHR.



The screenshot shows the HealthKard dashboard. At the top left is the HealthKard logo. At the top right are the words "Dashboard" and a blue "Logout" button. Below this is a section titled "View your received requests" which contains a table with the following data:

Expert ID	Expert name	Request Timestamp	Status
2	Anurag Singh	10/5/2023, 7:57:07 pm	Accepted

[Fig 8: Request List]

3. Grant/Deny access to your EHRs from the list.

## Accessing your EHRs

You can access your EHRs on the HealthKard platform at any time. Follow the steps below to access your EHRs:

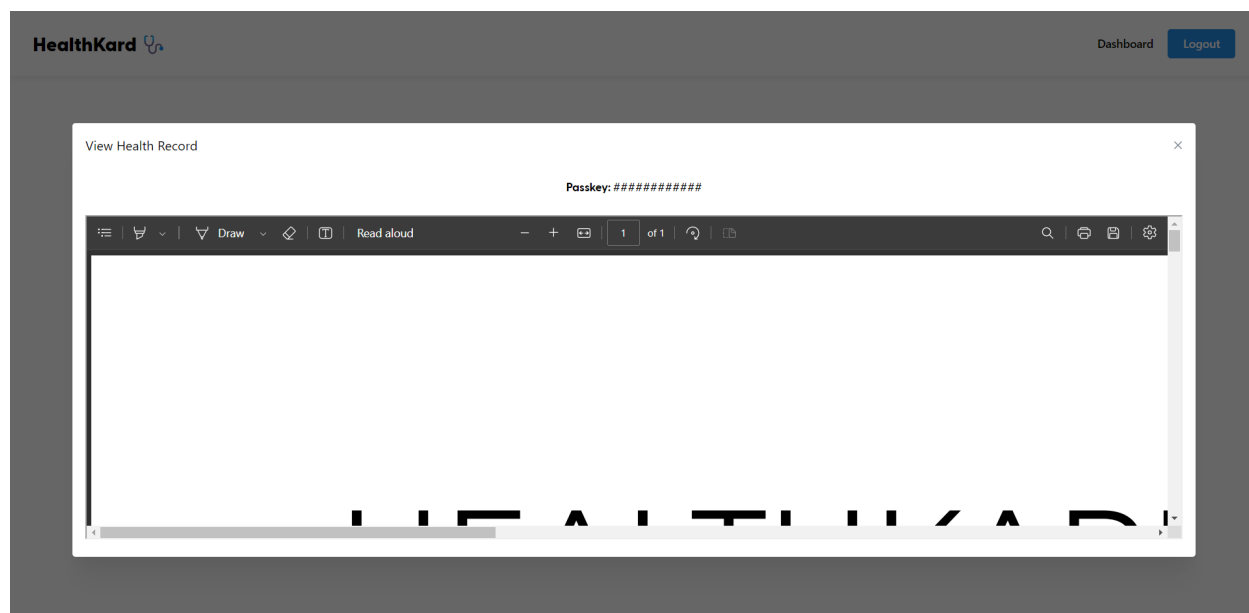
1. Authenticate into the portal using your HealthKard metamask account and aadhar. (refer Fig. 4)
2. Click on "View/Upload Documents" on the HealthKard dashboard. (refer Fig. 7)
3. Click on the "View" button in front of the Document that you want to read and enter your password.

The screenshot shows the HealthKard dashboard with a dark grey background. At the top left is the 'HealthKard' logo. At the top right are links for 'Dashboard' and 'Logout'. In the center, there is a section titled 'Upload new health record' with a 'Password \*' label and a text input field. Below this, a white modal window titled 'View Health Record' is open. Inside the modal, it says 'Enter your password to view the document' and has a 'Password \*' label with a text input field and a 'Submit' button. Below the modal, there is a table with two columns: 'Document ID' and 'IPFS URL'. The first row contains the values '14a0d87574cd5627f0da...' and 'https://bafybeidhjwophltuyizkgelig66bdrshhpeg4rmy3xa7i2abqhd3ojtza.ipfs.w3s.link'. To the right of the table is a 'View' button.

Document ID	IPFS URL
14a0d87574cd5627f0da...	https://bafybeidhjwophltuyizkgelig66bdrshhpeg4rmy3xa7i2abqhd3ojtza.ipfs.w3s.link

[Fig 9: Enter your password]

4. Enter the passkey provided to read the document



[Fig 10: Read EHR]

## Expert's View

To get started with HealthKard, you will need to create an account on the platform. Follow the steps below to create your account:

1. Go to the HealthKard website and click on "Create Expert ID" (refer Fig 1). You will be redirected to the Create Health ID portal.
2. Enter your personal information, such as your name, date of birth, and contact information.

Progress bar: 1 First step Connect to MetaMask | 2 Second step Enter your data | 3 Final step View HealthKard

Full Name \*  
Ada Lovelace

Date of birth \*  
May 10, 2023

Blood Group \*  
B +ve

Gender \*  
Male

IMHA Registration Number \*  
123456789012

Phone Number \*  
9876543210

Email \*  
your@email.com

Qualification \*  
MBBS

Password \*  
Password

Drop passport size photo here

Back Submit

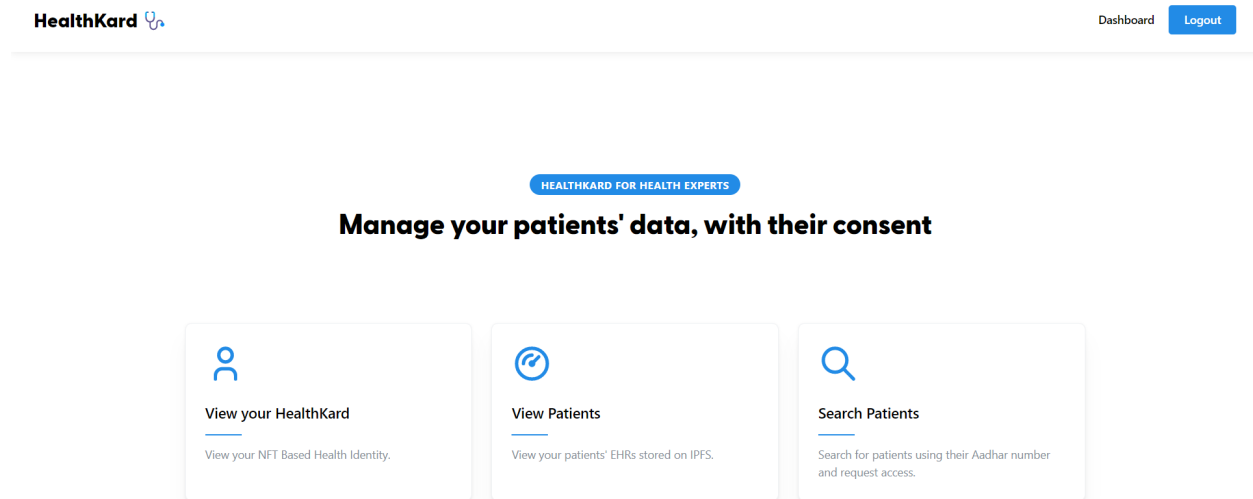
[Fig 11: Expert Details]

3. Click on "Submit" to generate your unique Expert ID.

## Request Patient

Once you have created your Health ID, you can search for your patients' ID on the HealthKard platform and request access. Follow the steps below to manage your patients' EHRs:

1. Click on "Search Patients" on the HealthKard dashboard



[Fig 12: Expert Dashboard]

2. Enter the patient's aadhar id whose health records you want to access. Click on "Request Access" button to request access for their Health Records

### Enter patient's Aadhar number to request consent

Patient's Aadhar Number \*

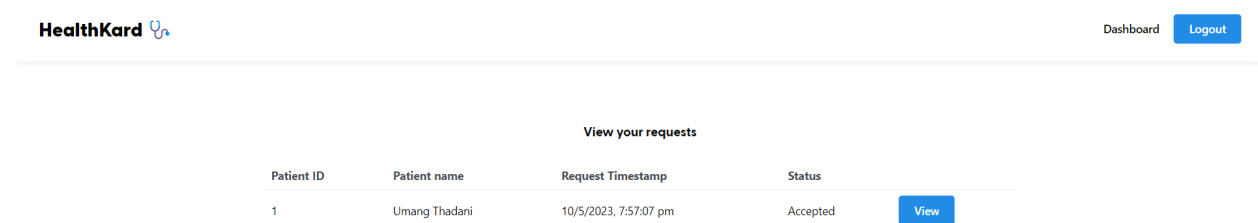
  

[Fig 13: Request Access]

## Accessing Patient EHRs

You can access your patients' EHRs on the HealthKard platform at any time. Follow the steps below to access your patient's EHRs:

1. Authenticate to HealthKard using your metamask account (refer Fig. 4)
2. Click on "View Patients" on the HealthKard dashboard (refer Fig. 12)
3. Click on the patient's card to get a list of their EHRs

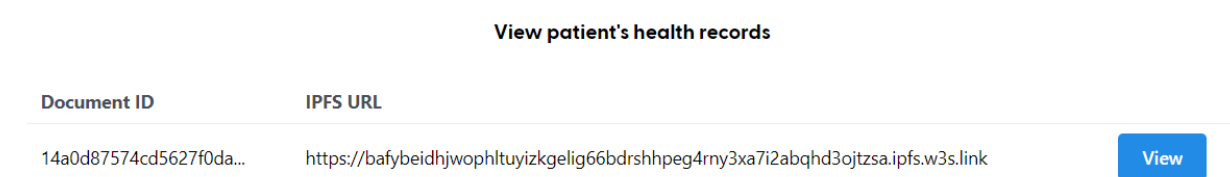


The screenshot shows the HealthKard dashboard. At the top left is the HealthKard logo. At the top right are links for "Dashboard" and "Logout". Below the header is a section titled "View your requests". It contains a table with the following data:

Patient ID	Patient name	Request Timestamp	Status	
1	Umang Thadani	10/5/2023, 7:57:07 pm	Accepted	<a href="#">View</a>

[Fig 14: Patient List]

4. Click on the Health Record that you want to view



The screenshot shows the "View patient's health records" section. It contains a table with the following data:

Document ID	IPFS URL	
14a0d87574cd5627f0da...	<a href="https://bafybeidhjwophltuyizkgelig66bdrshhpeg4rny3xa7i2abqhd3ojtza.ipfs.w3s.link">https://bafybeidhjwophltuyizkgelig66bdrshhpeg4rny3xa7i2abqhd3ojtza.ipfs.w3s.link</a>	<a href="#">View</a>

[Fig 15: EHR List]

5. Enter your password (refer Fig. 11)
6. Enter passkey as provided and read the EHR (refer Fig. 12)

## Conclusion

HealthKard provides a secure and reliable way to manage your electronic health records (EHRs). The platform uses blockchain technology and smart contracts to ensure that your records are secure, tamper-proof, and easily accessible. With HealthKard, you can manage your EHRs, share them with healthcare providers, and access them at any time, from anywhere.