HealthChain

AI + Blockchain for Smarter, Safer Healthcare

NOOB HACKERS

Team ID: T-138

Lovely Professional University

Problem Statement

Rural-Urban Gap

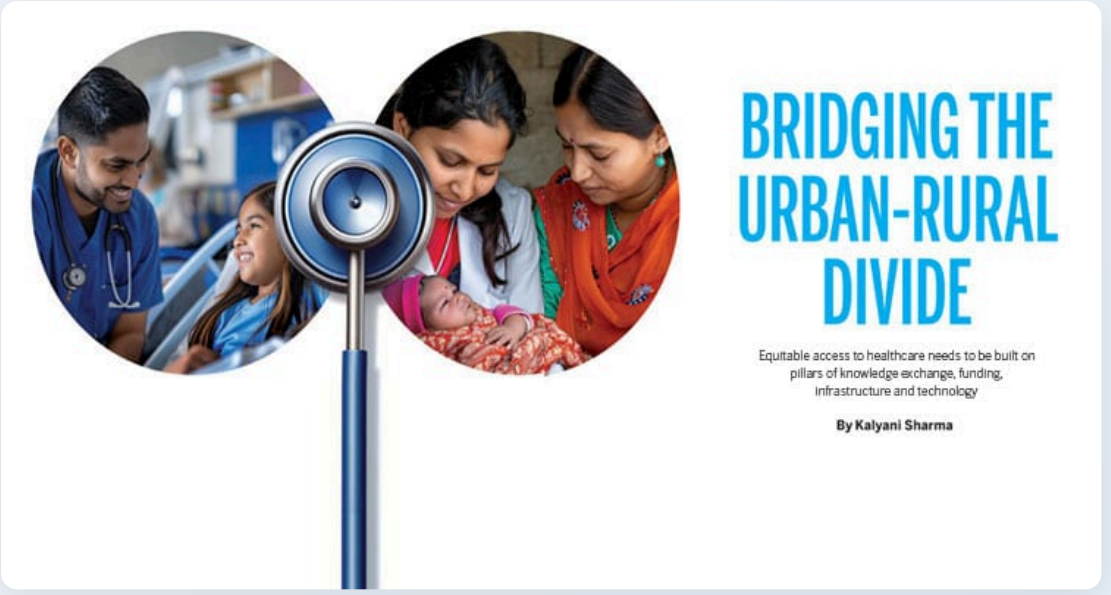
Only **13%** of rural population have access to primary health centers

Data Silos

21% of patients reported finding inaccurate information on medical records

Trust Issues

725 data breaches in 2023, exposing **133 million** records



Real-world Impact

Case Study

A rural patient with diabetes travels 80km to a city hospital, but lacks medical records. Doctor cannot access previous treatments, leading to delayed diagnosis and complications.

65% of India's population lives in rural areas with limited healthcare access

Before HealthChain

Fragmented records, delayed treatment

After HealthChain

Secure access, immediate care

Solution Overview

HealthChain: A decentralized health management system that combines AI and blockchain to transform healthcare delivery

Accessible

Bridges rural-urban healthcare gap through telemedicine integration

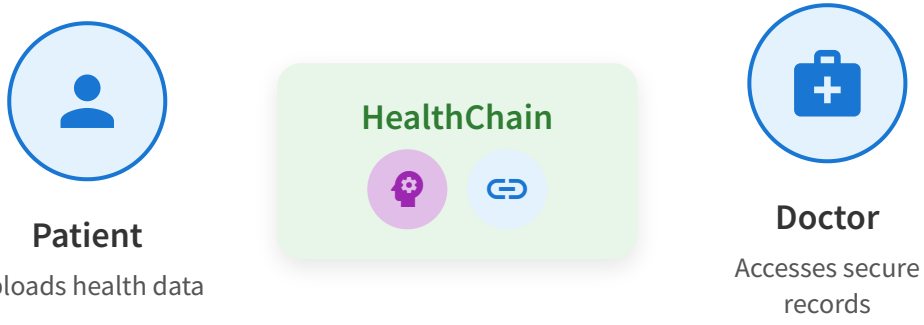
Secure

Blockchain ensures data integrity and patient-controlled access

Intelligent

AI-powered diagnosis and predictive health analytics

How HealthChain Works



Key Features

AI-Powered Diagnosis

Advanced machine learning algorithms for accurate health predictions and early disease detection

- Pattern recognition
- Risk assessment

Secure Record Storage

Decentralized blockchain technology ensures tamper-proof medical records

- Immutable records
- Cryptographic security

Telemedicine Integration

Seamless virtual consultations connecting patients with healthcare providers

- Remote consultations
- Real-time video calls

Patient-Controlled Data

Patients maintain complete control over who can access their health information

- Granular permissions
- Access history tracking

Technology Architecture

Tech Stack

AI Models
TensorFlow, PyTorch

Blockchain
ICP, Rust

Frontend
React, TypeScript

Backend
Node.js, MongoDB

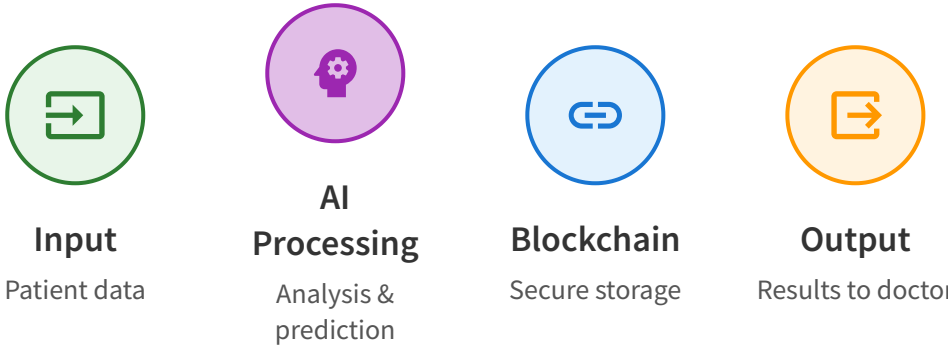
Input
Patient data, symptoms

Processing
AI analysis, validation

Storage
Blockchain encryption

Output
Diagnosis, recommendations

System Architecture Flow



Competitive Advantage

How HealthChain outperforms existing healthcare solutions

Competitor	Their Approach	Our Edge
Health Apps	Centralized data storage, limited AI capabilities, basic record keeping	Blockchain security · Advanced AI · Patient control
EMR Systems	Hospital-centric, siloed data, interoperability challenges	Cross-facility access · Decentralized · Real-time sync
Telemedicine Platforms	Video consultations, basic prescriptions, no integrated records	Predictive insights · Complete history · AI-assisted diagnosis

Secure

Blockchain encryption ensures data integrity and prevents breaches

Decentralized

No single point of failure, distributed across network nodes

AI-Driven

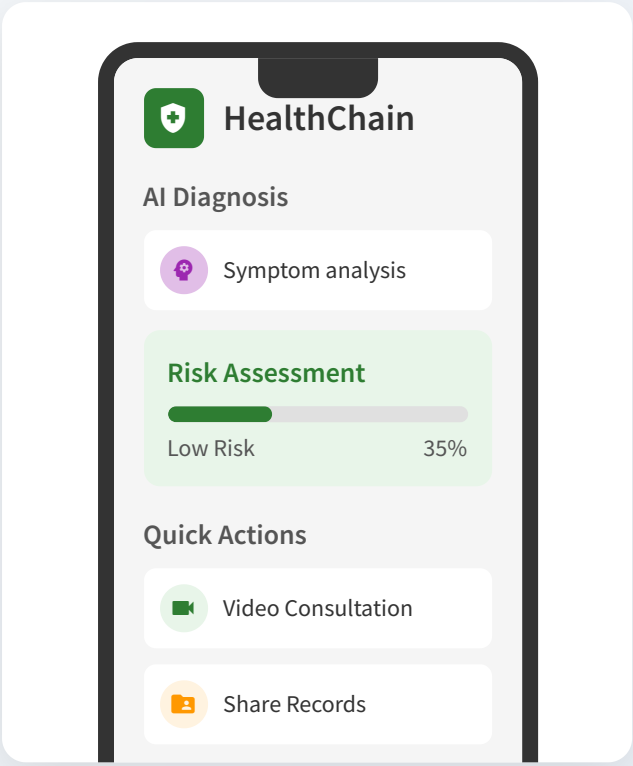
Advanced machine learning for accurate diagnosis and predictions

Scalable

Grows with healthcare needs, from clinics to hospital networks

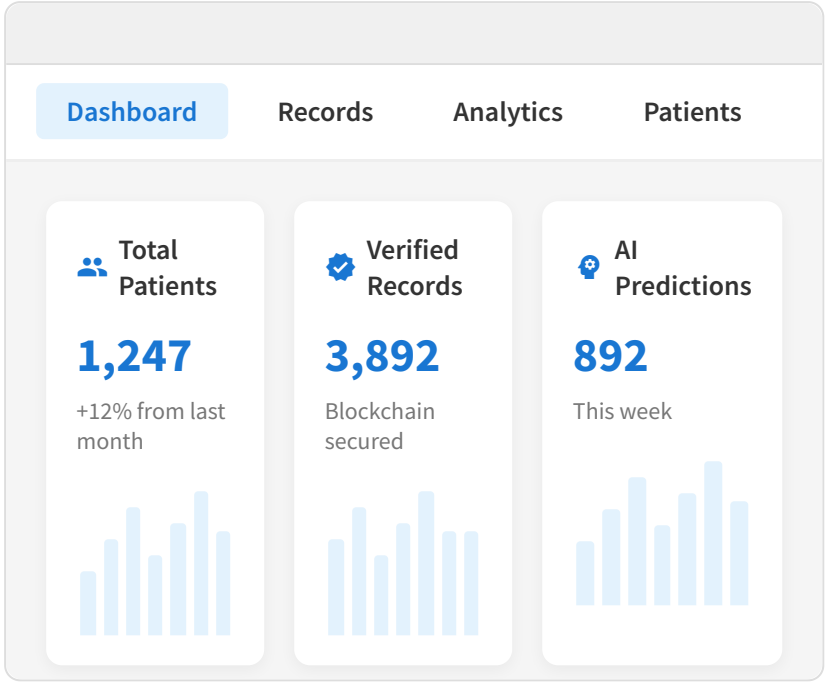
Demo/Prototype

Experience HealthChain through our intuitive interface



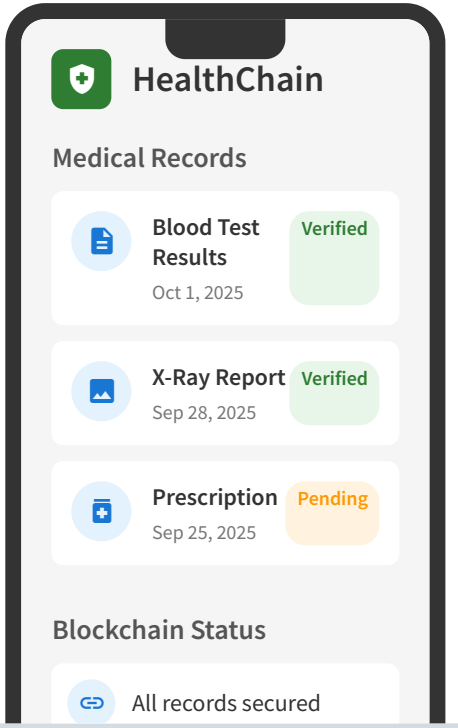
Mobile App

Patient-focused interface for on-the-go healthcare



Web Dashboard

Professional interface for healthcare providers



Record Management

Secure storage and sharing of medical records

Market/Scalability

Target Audience

Hospitals
Urban & rural healthcare centers

Rural Clinics
Primary healthcare providers

Govt. Initiatives
National health programs

Insurance Providers
Health insurance companies

Future Potential

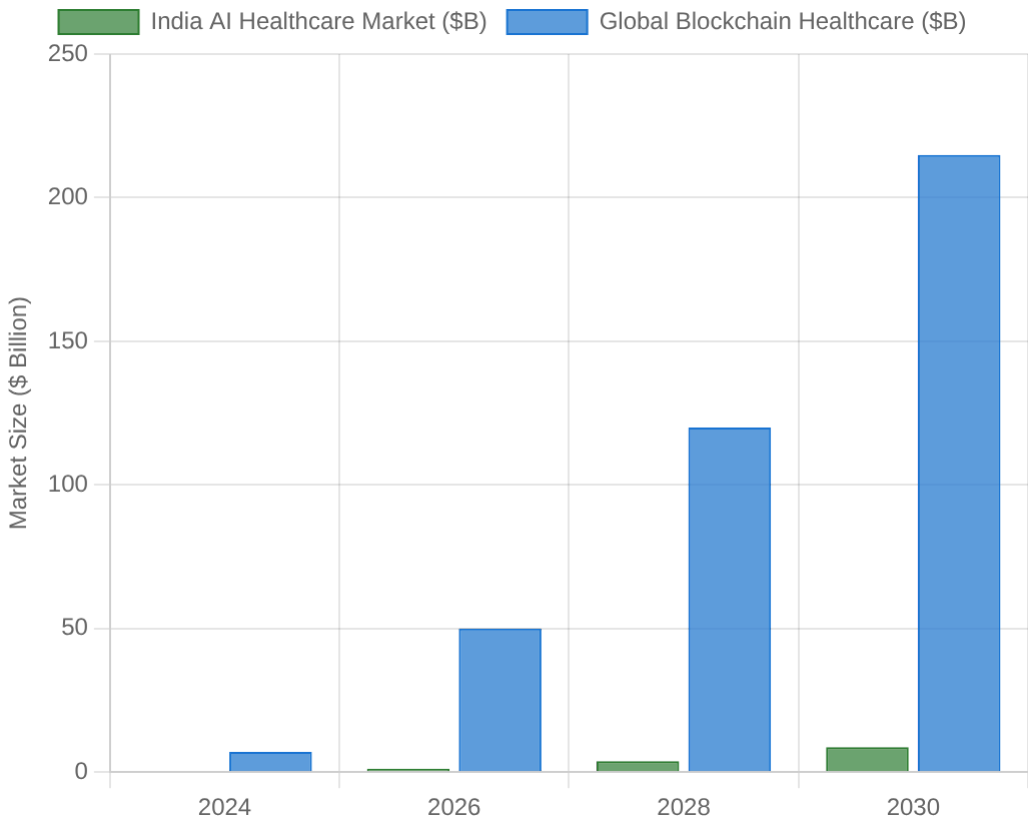
Insurance Integration
Automated claim processing

Wearable Data
Real-time health monitoring

Advanced AI Models
Enhanced predictive analytics

Pharma Integration
Supply chain management

Market Size & Growth



$8.7B
India AI Healthcare Market by 2030

41.8%
CAGR (2024-2030)

$214.9B
Global Blockchain Healthcare by 2030

Our Vision

Redefining healthcare with **intelligence** + **trust.**

Team Credits

Golu Kumar
Lead Developer

Medha jha
AI Specialist

Ajay Gangwar
Blockchain Expert

Sarwajeet Singh
Healthcare Advisor

Thank You

We welcome your questions and feedback

Sources

Healthcare Challenges

Rural Healthcare Access

Panagariya A. (2014). The Challenges and innovative solutions to rural health in India.

Only 13% of rural population have access to primary health centers

Healthcare Data Breaches

HIPAA Journal (2023). Healthcare Data Breach Statistics.

725 data breaches reported in 2023, exposing 133 million records

Doctor-Patient Ratio

Arora S. (2024). Challenges, Barriers, and Facilitators in Telemedicine.

Doctor-to-patient ratio in India is 1:1500 (vs WHO recommended 1:1000)

Data Silos Issues

CData Software (2023). Breaking Down Data Silos in Healthcare.

21% of patients reported finding inaccurate information on medical records

Market Data

AI in Healthcare Market

Grand View Research (2024). India AI in Healthcare Market Size & Outlook.

Expected to reach $8.728 billion by 2030 with a CAGR of 41.8%

Blockchain Healthcare Market

Grand View Research (2023). Blockchain Technology in Healthcare Market Report.

Projected to reach $214.86 billion by 2030

Telemedicine Growth

Ashokan A. (2024). Bridging the Gap in Providing Primary Care to Rural Area.

India's telemedicine market expected to grow at a CAGR of 21.2% from 2022 to 2030

eSanjeevani Impact

Dastidar BG. (2024). Reimagining India's National Telemedicine Service.

Provided over 276 million consultations

Technology Trends

Blockchain in Healthcare

AbdelSalam FM. (2023). A Systematic Review of Blockchain Technology Benefits.

Improves data security, confidentiality, and interoperability

Patient-Controlled Data

Hager A. (2021). Sharing Patient-Controlled Real-World Data.

PCARE framework allows sharing while protecting patient privacy

Healthcare Blockchain Companies

Solulab (2025). Top Healthcare Blockchain Companies to Watch.

BurstIQ, Medicalchain, Guardtime, Chronicled, Avaneer Health

Digital Health Challenges

Inampudi S. (2024). Barriers to implementation of digital transformation.

Restricted internet connectivity and access to adequate medical equipment

All data points referenced in this presentation are from peer-reviewed journals, industry reports, and official government sources