



National Digital Health Mission

Unified Health Interface
Consultation Webinar: 4th August 2021

Journey to NDHM

The National Digital Health Mission (NDHM) is the outcome of an iterative process involving stakeholders across the health ecosystem

National Health Policy 2017

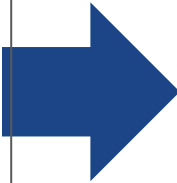
The National Health Policy, 2017 policy advocated extensive deployment of digital tools for improving the efficiency and outcome of the healthcare system

National Health Stack 2018

Vision for a digital stack for health laid out with key objectives and principles

National Digital Health Blueprint 2019

Framework of building the National Digital Health Network finalized



Consultation Process Till Date

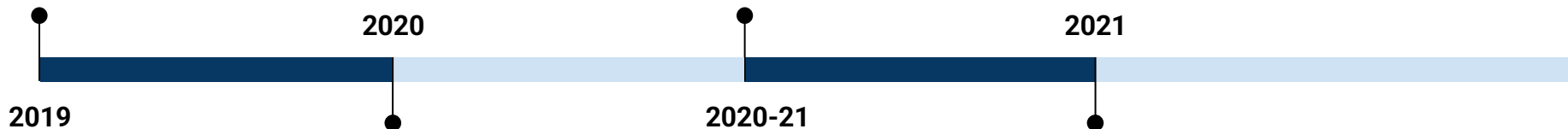
NDHM is currently conducting the fourth round of consultations, and will continue to engage with ecosystem stakeholders as the initiative

1st Level of Consultations

An initial round of consultation was held prior to releasing the National Digital Health Blueprint in 2019

3rd Level of Consultations

One-on-one consultations with specific stakeholders including insurance companies, govt. Health programmes, licensing authorities, medical councils, among others, were held after the pilot to gather feedback on specific building blocks



2nd Level of Consultations

Before launch of the NDHM pilot in August 2020, a series of consultations were held with varied groups of stakeholders at the state and central level

4th Level of Consultations (Current)

Currently ongoing consultations with ecosystem stakeholders through consultation papers released for various building blocks

Principles of NDHM

The NDHM architecture has been designed in keeping with the core functional and technological principles outlined in the NDHB

Functional Principles

Educate and Empower

Universal & Inclusive

Think Big,
Start Small,
Scale Fast

Security & Privacy by Design

National Portability

Accountability

Technology Principles

Interoperability

Building Blocks

Single Source of Truth

Open APIs

Minimalist Design

Leverage Legacy

The Need for a Unified Health Interface

- Key Challenge Addressed
- Proposed Approach

Key Challenge

India lacks the standards and infrastructure for health data that enable the accelerated adoption of digital health services

COVID 19 highlighted the importance of enabling digital health services

But structural challenges hinder digital health services in India



Discovery

Reliable and accurate search for hospital beds, drugs and O2

Booking

Easy scheduling appointments for vaccination or treatment



Fulfilment

Teleconsultation with verified professionals

Process Challenges

Most digital health service delivery (e.g., teleconsultation) processes are **platform centric and tied to the providers choice of market solution**

Technical Challenges

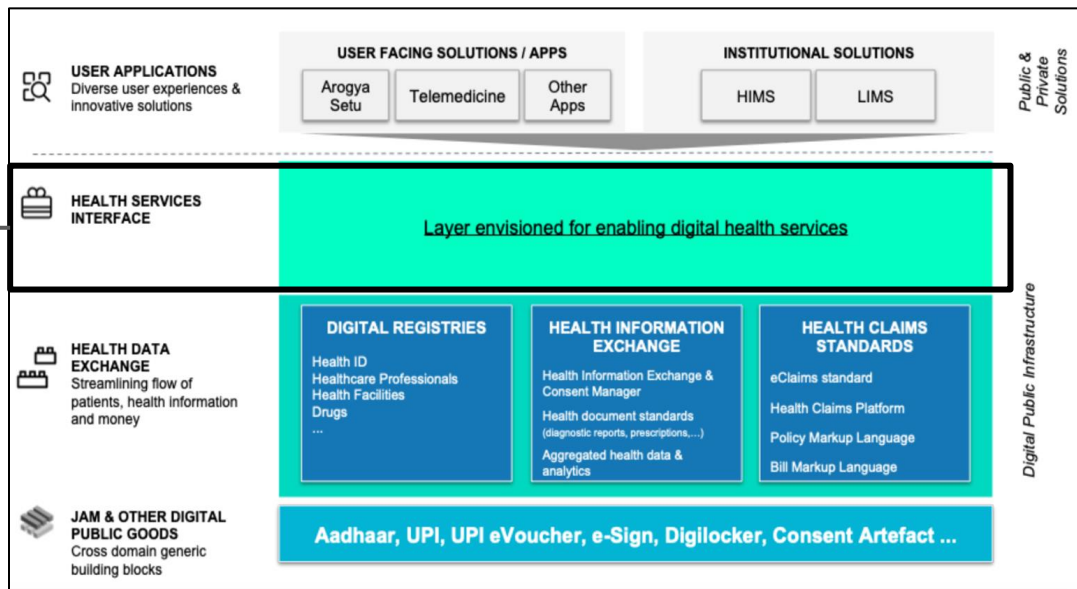
Prevalence of paper documentation and lack of infrastructure to enable digital capture and sharing of health data prevents continuity of care

A decentralized, inclusive and open network may spur adoption of digital health services which in turn may help in addressing critical healthcare ecosystem needs

Proposed Approach

NDHM proposes to build a new layer in NDHM that is designed to enable the interoperability of health services

The NDHM Stack



Enabling Digital Service Delivery

- Till date, NDHM has built the foundational infrastructure to enable the interoperability of health data
- Moving forward, a new layer in the NDHM architecture will be built to enable the seamless provision and fulfilment of **digital health services**
- The NDHM architecture will **connect to other digital ecosystems** in India (e.g., UPI) to enable innovation and new modes of service delivery

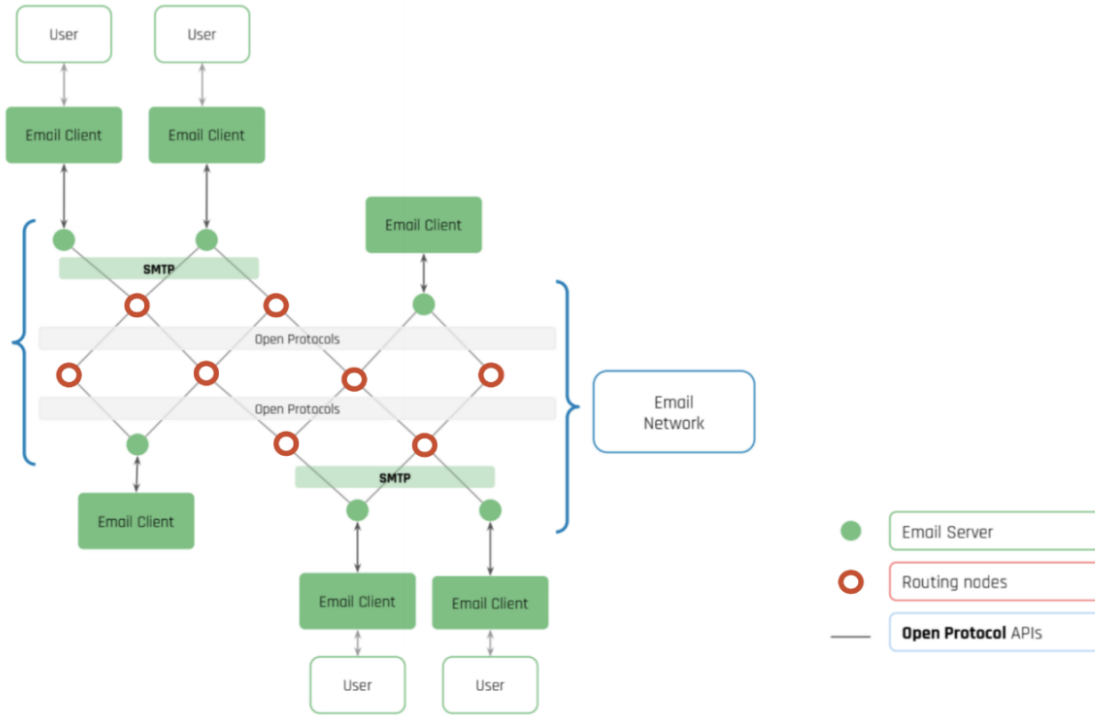
This webinar focuses on the design of this layer
- **Unified Health Interface (UHI)**

Understanding Open Networks

- Introduction to Open Networks
- Creating an Open Network for Health Services

Open Networks

The Health Services Layer will be designed in accordance with the principles of 'open networks'



Email as an example of an Open Network

An open network is based on open protocols - shared technical standards available to every participant in an ecosystem

Features of Open Networks

Open & Accessible

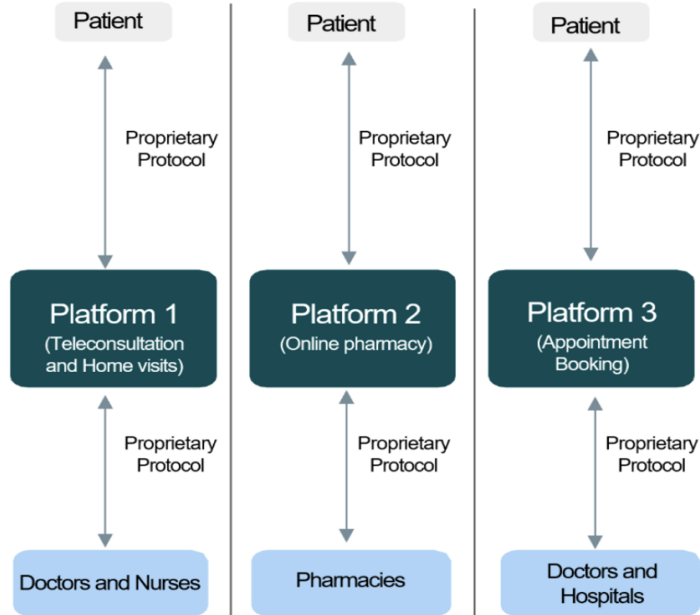
No Single Owner

Interoperable / Not Platform Centric

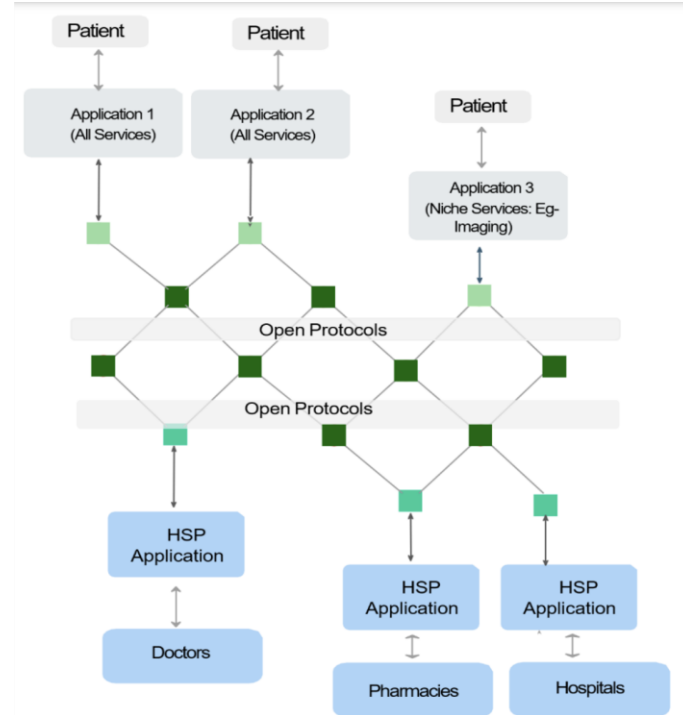
An Open Network for Health Services

Open Networks allow patients and providers to engage in digital health interactions across platforms and applications

Platforms vs. Open Networks



Platform-Centric Model



Open Network-Centric Model

Unified Health Interface

- A Teleconsultation Journey through UHI
- UHI Stakeholders
- UHI Objectives

A Teleconsultation Journey through UHI

The Health Services Layer will be designed in accordance with the principles of 'open networks'

Seeking Teleconsultation via UHI

1

Health ID Creation

Patient creates their Health ID via Aadhaar or any other KYC

2

Application (EUA) Login

Patient logs in to EUA of their choice using their HID and provides consent to access linked health records

3

Professional Search

Patient searches for professionals according to certain criteria e.g., specialty, language spoken

4

Search Results

Professionals that meet patient's criteria are displayed along with availability and price

5

Booking

Patient selects a professional and books a slot with them

6

Payment

EUA collects payments for the teleconsultation service and booking is confirmed

7

Consent Request

Patient gets request for consent from the professional on their EUA to share medical records

8

Consultation

At the booked slot, the professional calls the patient

9

Post-Consultation

Prescriptions / discharge summaries issued digitally on EUA, and rate services

UHI Stakeholders

There are 3 key stakeholders in UHI - the **Patients**, the **Health Service Providers** and the **Technology Service Providers**



UHI enables bidirectional exchange of service requests and responses, and health data

Patients



End User Application
(EUA)

UHI Protocols

Health Service Provider Application
(HSPA)

Health Service Providers



Access digital health services and health data

Fulfill services, generate and share health data; including but not limited to:

Technology Service Providers

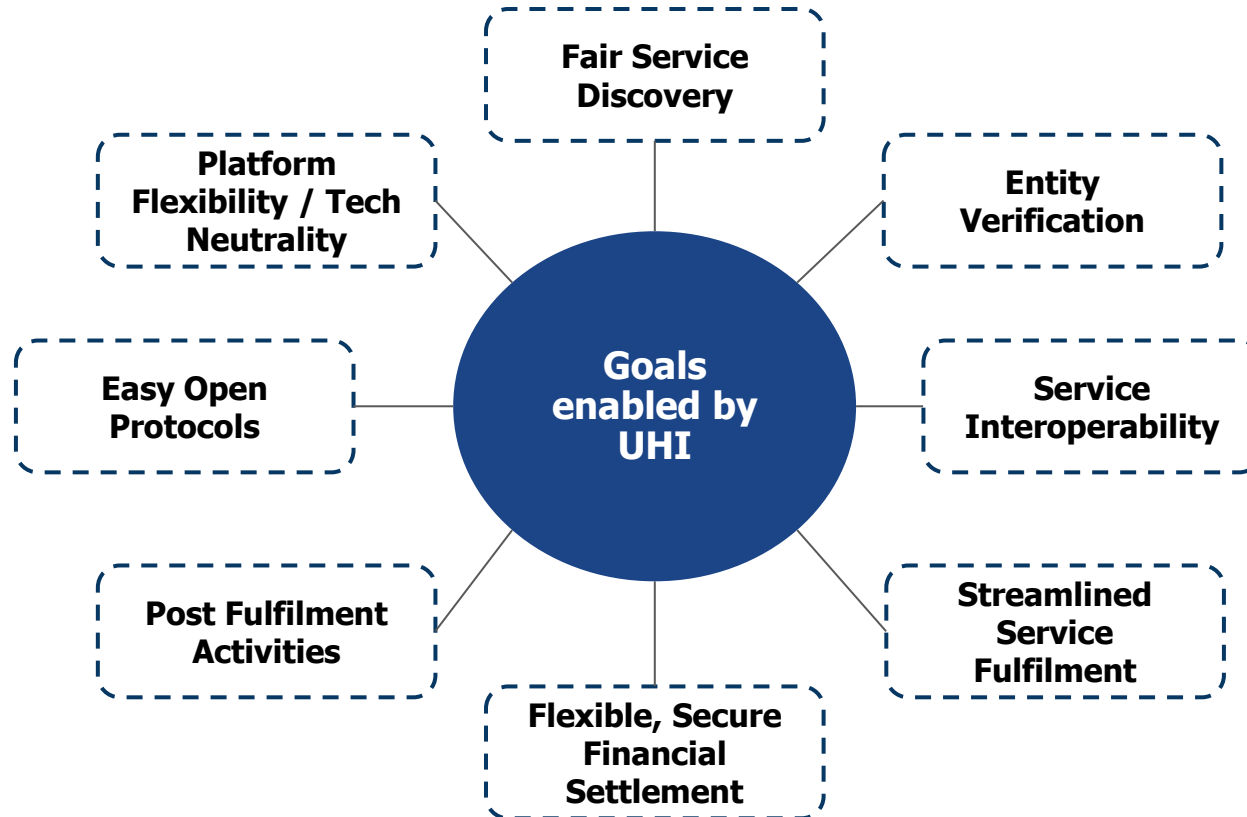


Build and provide software compatible with UHI to Patients and HSPs

- Doctors
- Hospitals
- Labs
- Clinics
- Pharmacies
- Health-tech players (e.g. teleconsultation portals, e-pharmacies)

Objectives of UHI

NDHM aims to create an open ecosystem for verified, seamless digital health transactions



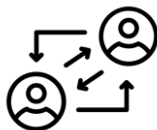
Leapfrogging in Digital Health

UHI can transform the processes involved in digital health service delivery; selected examples are outlined below

Process

Current State

Under UHI



Patient-Provider Engagement

Patients and providers need to use the same application or mode to complete digital health interactions

Patients can use any app of their choice to find doctors, book services, make payments, and share health data



Price Discovery

To find the best price for a service like an MRI, patients need to call multiple labs- aggregated reliable information is not easily available

UHI will make prices and quality ratings transparent; patients have more complete information to make decisions more easily



Continuity of Care

Complex cases requiring different specialties involved the patient integrating medical advice and records and visiting multiple doctors

UHI can enable Group Consult to allow professionals to easily collaborate to address a patient's needs holistically

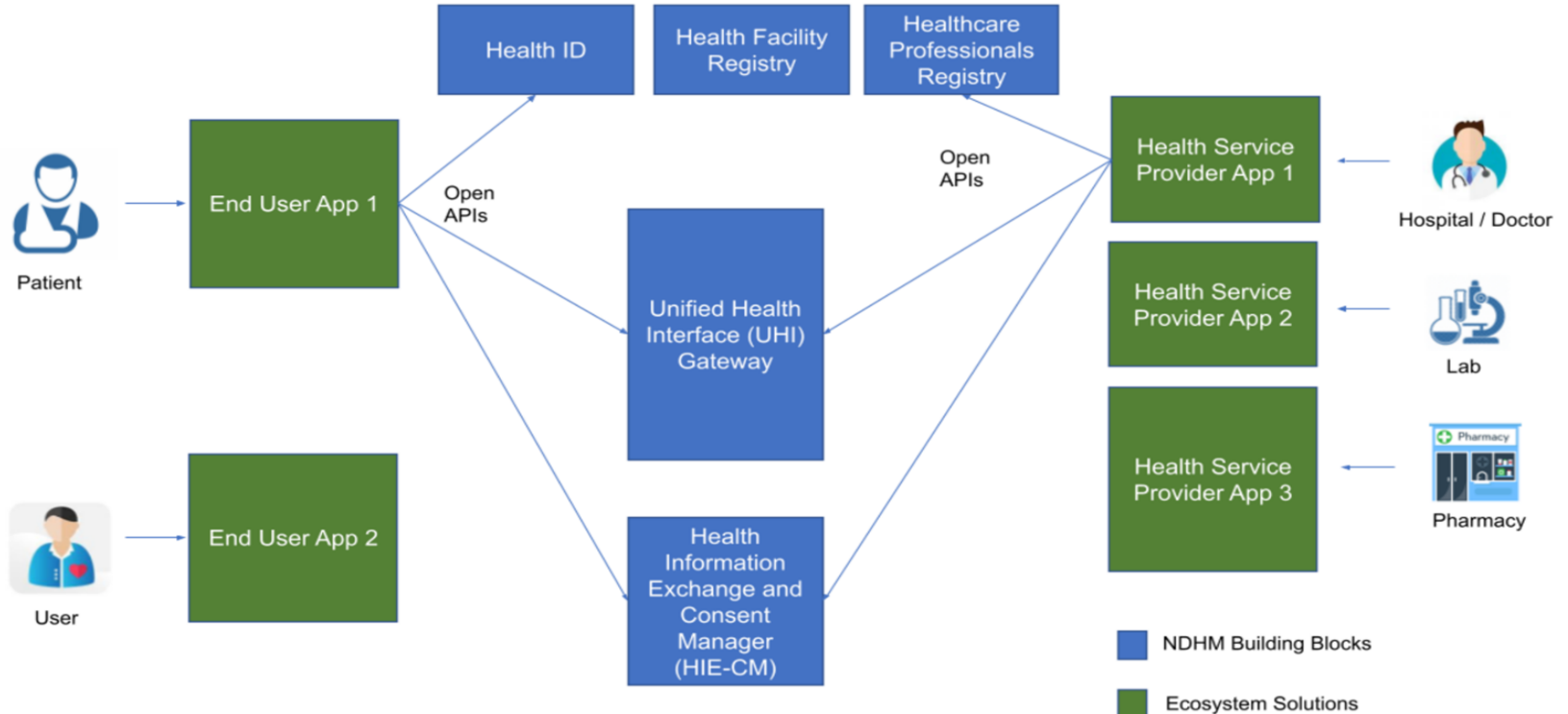
How Will UHI Work?

- UHI Architecture
- Components
- The Digital Health Journey Under UHI

UHI Architecture

UHI will use several NDHM building blocks to enable the interoperable layer for digital health services

Exchange of Requests and Data in UHI



Components of UHI

There are five key components that work together to enable digital health transactions to occur in UHI

UHI is envisioned as an open protocol that will enable a variety of digital health transactions between patients and health service providers

Components of the UHI Ecosystem

	UHI Gateway	NDHM Registries	Health Information Exchange	End User Applications	Health Service Provider Applications
Role	Implements the open technical protocols that enable UHI	Accurate identification and verification of participating entities	Enables interoperable exchange of health records	Enable patients to access and avail digital health services	Enable providers to deliver health services to end users
Owner	NDHM (Initially)	NDHM	Public or Private Market Players		
User	All ecosystem participants	All ecosystem participants	All ecosystem participants	Patients	Health Service Providers
Instance	NDHM UHI Gateway	Health Facility Registry	NDHM Consent Manager	Multiple Public or Private Applications (For eg: e-Sanjeevini)	Private HMIS

The Digital Health Journey under UHI

UHI will address every step in the end to end delivery of digital health services

Service Discovery

Service Booking

Service Fulfillment

Financial Settlement

Post Fulfillment

Role of UHI Gateway

Open protocols enable HSPs to declare their services for patients to discover

The UHI Gateway sends a request to all HSPs that meet the request criteria

HSP can evaluate the request and respond with pricing and other details

The EUA presents discovery results as per user's criteria

When EUA books the service, the gateway presents the various payment mechanisms available

A UHI transaction ID is created upon booking the service

HSP is accountable for delivering the service within the EUAs parameters

UHI gateway will only maintain transaction data logs but will not participate in fulfilment

The gateway tracks details of the transaction and confirmation of financial transfers

In case of disputes, the UHI will be able to provide details of every transaction

UHI protocols may support a rating system that for user and providers; the display of these ratings may be customized

UHI will also support grievance redressal, with respect to issues on the digital network

The Gateway may suspect users, TSPs or HSPs if in breach of UHI policies

Governance and Management

Governance and Management of UHI

NDHM has also developed a framework for governing, managing and driving adoption of the UHI gateway

Development of UHI Protocols



Development and Management of UHI Gateway

NDHM plans to maintain and operate the first UHI gateway for a certain period of time before considering introducing market-developed gateways.

NDHM will manage two instances of the UHI Gateway:

1 Sandbox: Testing and Integration

2 Production: Live delivery of services

Onboarding

The current NDHM sandbox will be expanded and include a process for accessing the UHI APIs

Pricing

A usage fee may be charged to cover the development, management & operation of the gateway. HSPs and EUAs will also be free to set service charges

Total Price for End User = HSP price for service + UHI Gateway charges (if any) + EUA service charges