

Consultation Paper on Unified Health Interface

Synopsis

The National Health Authority (NHA), on 23.07.2021 published a consultation paper to invite comments on the design and functionality of the Unified Health Interface (UHI). UHI is proposed to be a foundational layer of the National Digital Health Mission (NDHM) and is envisioned to expand interoperability of health services in India through open protocols. Details of NDHM are available on <https://ndhm.gov.in>

The complete text of the consultation paper can be [downloaded here](#); this document is primarily intended to provide an overview and summary of the key concepts and issues raised in the paper.

1. Objective

The key objective of the consultation paper is to elicit feedback from the public and concerned stakeholders on the functional and technical design of UHI, to ensure that UHI caters to the diverse needs of healthcare ecosystem players.

2. Role of UHI in Indian Digital Health Ecosystem

Healthcare providers across India are rapidly digitizing their services to offer better patient experiences. It is now possible, for example, to go to a hospital / clinic's website, book an appointment and consult with a doctor digitally. However, digital services, like telemedicine, have low adoption in India. Doctors consult with their existing patients using simple chat/ video call platforms and are unable to digitally expand their practice. Further, the doctors do not have access to a patient's health records and tools to view them, in order to give the best possible, advice to the patient. Similarly, for the patient, current chat and video platforms do not provide the best experience. and records are generally shared as jpg or pdf only. While certain applications do allow better user experience, it is mandatory for both doctors and patients to be available on the same platform and hence is very restrictive. This is also likely to create oligopolies in the market.

UHI aims at streamlining the digital health service experience for the providers of health service and the patient by establishing and standardizing the technology pathways that enable such services to be given. Amongst others, UHI aims to enable the following:

For Patients

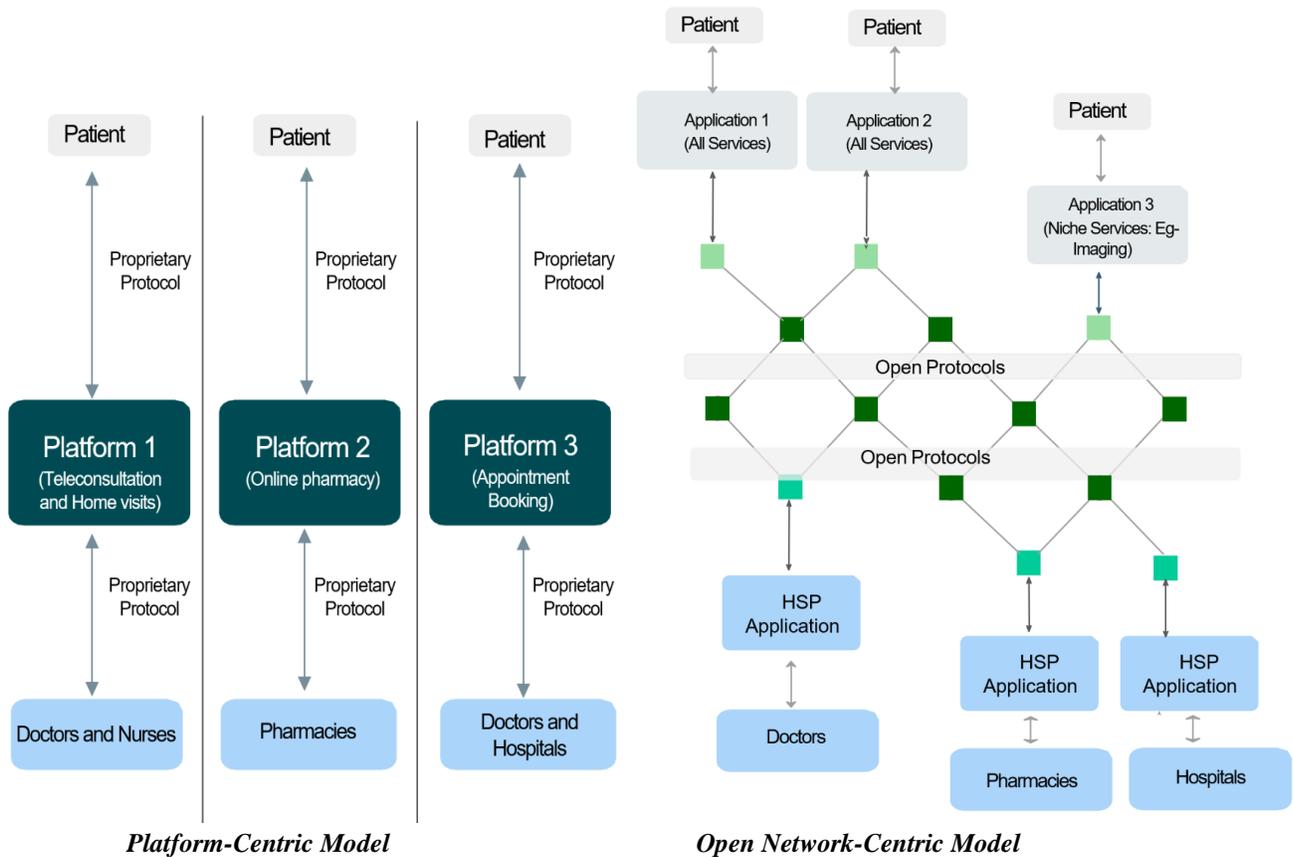
- Contact the doctor of their choice via any application that is UHI compatible.
- Enable a large segment of Indian users who do not have physical access to doctors to be able to connect with them digitally - regardless of location.
- Share health information with their health service providers and receive prescriptions, lab reports and doctor notes digitally on their devices.
- Discovery of a wide choice of health services in unbiased manner and with full transparency.

For Health Service Providers (e.g. Doctor, Healthcare Facility)

- Get immediate access to demand being generated across the UHI ecosystem - irrespective of the app / site that the Health Service Provider decides to use, they will be able to list and make their service available to the User.
- Connect with their existing customers services like appointment, teleconsultations etc using any End User Application that customers prefer.
- Access health records of patients with their consent taken digitally.

UHI plans to streamline digital health services by creating an open network built on open protocols

3. Open Networks and Protocols



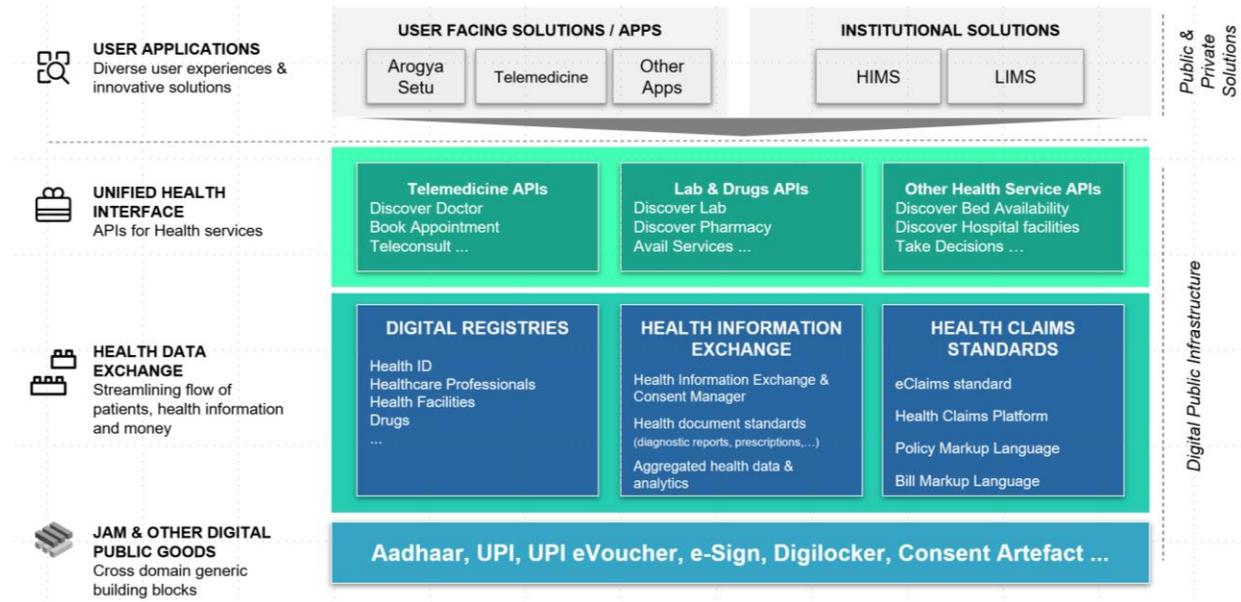
Open protocols are a set of shared technical standards accessible to everyone. An open (nonproprietary) protocol is one that is not owned by any particular entity and not limited to a particular entity's products. Email is an example of an Open Network that is built on an Open Protocol called SMTP. SMTP allows someone using an email client (say from Gmail) to send an email to any other email id (say to Hotmail) even if the email client is not the same as the senders. Open Networks allow all email addresses globally to be reachable and Open Protocols ensure the email will be delivered and rendered in a readable format by any email client.

Currently, there are no Open Protocols defined for delivery of digital health services. This results in the several fragmented, non-interoperable platforms providing health services in the market. For example, in order to obtain a digital health service (say tele-consultation or booking an appointment) the platform approach requires both patients and health service providers to use the same platform. In an open network, such as UHI, patients and health service providers can be on different applications but will be able to seamlessly interact.

UHI would enable interoperable connections over a nationwide decentralized open, secure and inclusive network. UHI will use Registries in NDHM, that keep a list of the entities participating in the network and Gateways that enable entities to communicate using the standard protocols.

4. Envisioned NDHM Architecture and UHI

Going forward, NDHM aims to transform the way digital health services are rendered in India through UHI. A revised representation of the NDHM architecture is as below:



The definitions and the envisioned functions of each of the layers is as mentioned below (the layers are described bottom-up).

- A. JAM and Existing Digital Public Goods:** NDHM has been designed to operate effectively with and leverage India's extant digital public goods, such as Aadhaar, Jan Dhan Bank Accounts, and Mobile (JAM), UPI, eSign, Digilocker, etc. These cross-domain capabilities are leveraged in NDHM to enable key functionalities.
- B. Health Data Exchange Layer:** This layer encompasses the core digital infrastructure modules needed to ensure the interoperability of various kinds of health data. These building blocks include core registries - the Health ID, the Healthcare Professionals Registry and the Health Facility Registry, Health Information Exchange and Consent Manager, Health Data Standards (based on FHIR), etc that drive trust and shareability of health data between patients and healthcare providers.
- C. Unified Health Interface (UHI):** UHI is envisioned as an open protocol for various digital health services. UHI Network will be an open network of *End User Applications (EUAs)* and *participating Health Service Provider (HSP) applications*. UHI will enable a wide variety of digital health services between *patients* and *health service providers (HSPs)* including, but not limited to:
 - Booking OPD appointments at hospitals / clinics
 - Booking Tele-Consultation
 - Discovering availability of critical care beds
 - Discovery of lab and diagnostic services
 - Booking of home visits for lab sample collections

Further, enabling digital health transactions across entities in a decentralized network requires building trust across the ecosystem. UHI Network will try to enable this using:

- A well-defined UHI Policy that all network participants abide by
- Verification of all entities as a prerequisite for participation
- A rating / reputation system for entities and services
- Support grievance redressal mechanisms

D. User Applications: This is the end-user layer of the NDHM ecosystem. It comprises the applications and platforms developed by the government or private sector through which patients, healthcare providers, insurers, researchers, policy makers, etc. access trusted health and health services. It is expected that innovation and competition will ensure a choice to users like patients and healthcare providers.

5. Stakeholders in UHI Network

End-Users/ Patients: UHI will enable end users / patients to access multiple digital health services from any platform of their choice, improving accessibility, quality and efficiency. Patients shall also be able to access their medical and health records such as medical reports, lab results, clinical records, etc, electronically, and share them with chosen healthcare providers.

Health Service Providers (HSPs): HSPs include, but are not limited to: Doctors of any system of medicine, Hospitals, Labs, Pharmacies, health service aggregators (platform players that partner with various health organisations to offer services to end users), Home care providers (including home nursing care, teleconsultations, and labs offering home sample collection services)

Technology Service Providers (TSPs): Technology service providers are organisations that provide software interfaces that are compatible with UHI to health service providers and patients. These applications implement the UHI protocols to enable delivery of a digital health service. TSPs need to satisfy all protocols, certifications or policies as defined for UHI. Only certified applications can be registered and access services on the UHI network.

6. Key Issues

The consultation paper describes, in detail, the proposed architecture of UHI along with its governance and maintenance. Consultation is sought in on all proposed concepts including, but not limited to, benefits and risks of an open network approach, stakeholders and stakeholder incentives, range of services in UHI, proposed technical model and UHI governance and pricing.

All stakeholders are encouraged to provide comments on the issues raised in the paper, preferably after they have reviewed the full text of the consultation paper. If there are any other issues that the public would like to raise or comment on, they are invited and encouraged to do so. Please note that this paper is only a summary paper. All stakeholders are requested to please read the full text of the consultation paper [here](#) for further clarity.

Disclaimer:

Please note that the above document is intended to be purely consultative in nature and is intended to provide an overview of the creation and operation of the Unified Health Interface. Nothing contained in this document should be considered to be legally binding in any manner. The NHA, its employees and advisors, make no representation or warranty and shall have no liability to any person, under any law, statute, rules or regulations or tort, principles of restitution for unjust enrichment or otherwise for any loss, damages, costs or expenses which may arise from or be incurred or suffered on account of anything contained in this document or otherwise, including the accuracy, adequacy, correctness, completeness or reliability of the document and any assessment, assumption, statement or information contained therein or deemed to form part of this document.