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national health authority

Ministry of Health and Family Welfare
Government of India

सत्यमेव जयते

# Consultation Paper

# on

# Health Facility Registry

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Written Comments on the Consultation Paper are invited from stakeholders by 13th July. Comments are to be preferably provided electronically on the NDHM website via form available at https://ndhm.gov.in/publication/consultationpapers. The comments may also be sent to Vikram Pagaria, Joint Director (Coordination), National Health Authority, on the email ID ndhm@nha.gov.in. For any clarification/ information, he may be contacted at Telephone No. 011-23468786.

## Acronyms and Abbreviations

| | |
|---|---|
| API | Application Programming Interface |
| EMR | Electronic Medical Records |
| FHIR | Fast Healthcare Interoperability Resources |
| FID | Facility ID |
| HFR | Health Facility Registry |
| HID | Health ID |
| HPR | Healthcare Professionals Registry |
| MFL | Master Facility List |
| NABCB | National Accreditation Board for Certification Bodies |
| NDHB | National Digital Health Blueprint |
| NDHE | National Digital Health Ecosystem |
| NDHM | National Digital Health Mission |
| NHA | National Health Authority |
| NHP | National Health Policy |
| NHRR | National Health Resource Repository |
| NIN | National Identification Number |
| PMJAY | Pradhan Mantri Jan Aarogya Yojana |
| QCI | Quality Council of India |
| ROHINI | Registry of Hospitals in Network of Insurance |
| WHO | World Health Organisation |

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# Chapter 1

# Introduction and Background

## 1.1 Objectives

1.1.1. This document has been published to invite stakeholder comment and consultation on the certain strategic and functional fundamentals of the Health Facility Registry (HFR). HFR is envisioned to be a comprehensive registry of health facilities of various types, across all systems of medicine, that operate within India's healthcare ecosystem.

1.1.2. In this document, an attempt has been made to frame and contextualize the issues for consultation and provide adequate context for the public to weigh in with their comments. A wide range of policy, strategic and technical matters are covered, some of which may depend upon the interpretation of the law. The information given is not intended to be an exhaustive account of statutory requirements and should not be regarded as a complete or authoritative statement of law. The approaches discussed henceforth are ideas and not decisions. Final decision shall be taken after considering suggestions and feedback received to this paper. Implementation, including necessary course-correction in the pilot, shall be done after that.

1.1.3. Multiple sources have been consulted to draft this consultation paper and information presented herein. However, NHA understands that there might still be gaps with respect to practical implementation. Hence, the desired outcome from this process of consultation is clear feedback and answers to the questions posed at the end of each chapter. Additionally, stakeholders are welcome to raise any other issues they deem critical for the development of such a platform.

1.1.4 This consultation paper is restricted to the Health Facility Registry building block of National Digital Health Mission. Information on other building blocks (Healthcare Professionals Registry, Unified Health Interface, Data Retention, etc) and issues within them may have been discussed in the other consultation papers published by NHA.

## 1.2 Evolution of NDHM

1.2.1 The National Health Policy (NHP), published in 2017, had the following goal -
"The attainment of the highest possible level of health and wellbeing for all at all ages, through a preventive and promotive health care orientation in all developmental policies, and universal access to good quality health care services without anyone having to face financial hardship as a consequence."

1.2.2 A key tenet of the NHP was the adoption of digital technologies in the healthcare ecosystem. To realize this goal, the Ministry of Health and Family Welfare constituted a committee headed by Shri J. Satyanarayana to develop an implementation framework for the National Health Stack. This committee

produced the National Digital Health Blueprint (NDHB), laying out the building blocks and an action plan to comprehensively and holistically implement digital health.

1.2.3. To define the rationale, scope and implementation arrangements of the framework of digital healthcare ecosystem laid out in NDHB, National Digital Health Mission (NDHM), was then launched on August 15, 2020, with the following vision:

"To create a national digital health ecosystem that supports universal health coverage in an efficient, accessible, inclusive, affordable, timely and safe manner, that provides a wide-range of data, information and infrastructure services, duly leveraging open, interoperable, standards based digital systems, and ensures the security, confidentiality and privacy of health-related personal information."

For more information on the framework and evolution of NDHM, you can refer to the National Digital Health Blueprint document at https://ndhm.gov.in/home/ndhb.

## 1.3 Building Blocks of NDHM

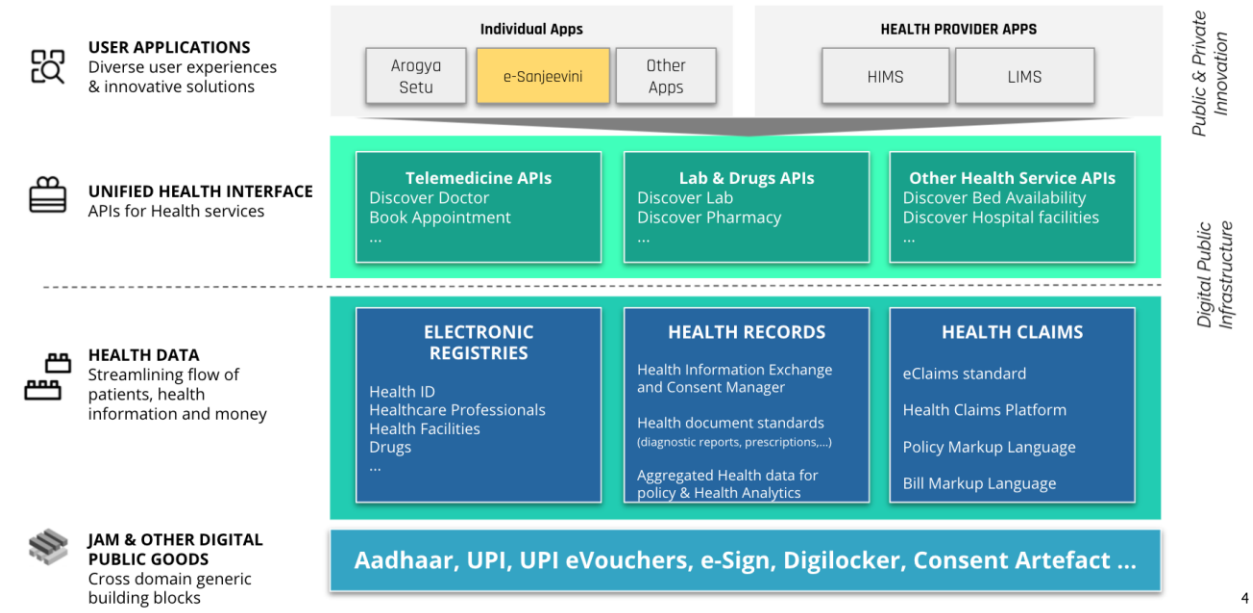


*Fig. 1. NDHM Architecture*

1.3.1. The National Digital Health Blueprint (NDHB) outlined key building blocks for India's Digital Health Ecosystem after detailed discussions with stakeholders and research on existing systems. Detailed information on each of these building blocks can be read in the official NDHB strategy document.

1.3.2. Some of these building blocks are registries. Registries are secure repositories of data of various types (on health facilities, healthcare professionals etc.) that users (individuals or organizations) may voluntarily enrol in. These registries shall be designed with strong data governance mechanisms, adhering to the principles of verifiability, accessibility, and identity management. In their respective domains, these

registries are designed to emerge as nationally recognized and accepted databases. They will be considered successful if they are adopted by ecosystem stakeholders across the private and public sector as sources of truth. These registries will only achieve this vision if trustability and verifiability of their data is paramount in design. Further, in order to drive adoption, these registries must be interoperable with other NDHM building blocks.

1.3.3 These registries, including Health ID, Health Facility Registry and Healthcare Professionals Registry, as has also been outlined by NDHB, have in place a carefully analysed process to ensure uniqueness of data, i.e, no duplicates.

1.3.4 In the initial pilot phase, the following building blocks were launched by NDHM in the 6 Union Territories:

1) **Health ID**: It is important to standardize the process of identification of an individual across healthcare providers. Therefore, every patient who wishes to have their health records available digitally must start by creating a Health ID. Each Health ID will be linked to a health data consent manager. Multiple health data consent managers are likely to be available for patients to choose from. Health ID will be designed to not require a physical card. Healthcare providers will be able to rapidly look up a Health ID by searching on the ID, alias, mobile or Aadhaar number. The Health IDs can be presented in e-card format(s) and issued to patients who need them.

The Health ID card will also include a QR code that can be scanned to enable seamless patient registration at health facilities.

**2) Healthcare Professionals Registry (HPR):** Healthcare Professionals Registry, referred to as Health Workforce Registry in the NDHB, is the master data of information on doctors, nurses, paramedical staff, ASHAs and many other healthcare professionals cadres. NDHM is developing these registries in a phased manner starting with the DigiDoctor platform which was launched as a part of the NDHM pilot in August 2020..

**3) Health Facility Registry (HFR):** The Health Facility Registry will consist of one record and a unique identifier for each healthcare facility in the country – hospitals, clinics, diagnostic centres, pharmacies etc, across all systems of medicine and covering both public and private health facilities. The initial version of HFR was launched as a part of the NDHM pilot in August 2020. This paper, going forward, covers the key functional and technical aspects of HFR and asks some pertinent questions for consultation.

**4) NDHM Sandbox**: NDHM Sandbox Environment is a framework developed by NHA to allow technologies or products to be tested in the contained environment in compliance with NDHM standards. This will help organizations intending to be a part of NDHE to become a Health Information Provider or Health Information User or efficiently link with building blocks of NDHM. The environment allows both alpha as well as beta testing of the products.

**5) Consent Manager and Gateway:** The exchange of health information is enabled by the consent manager and gateway. Health records can only be issued / viewed with patient consent. The consent manager supports requests, grants and revoking of consent by users.

The creation of various modules in the NDHM, would allow to create an ecosystem of healthcare service delivery, wherein a patient with uniquely identified Health ID can seek services from any of the Health Facilities registered in the HFR through a Healthcare Professional registered in the HPR database.

## 1.4 Health Facility Registry (HFR)

1.4.1 The Health Facility Registry is proposed to be the single complete, up-to-date repository of the health facilities in the country. It is the primary source of information for all other databases and lists and facilitates exchange of standardized data of both public and private health facilities across all systems of medicine, from allopathy to Ayurveda. Centrally maintained and stored, HFR includes data needed to uniquely identify each health facility - name, location, administrative information - as well as information on the service capacity of the facility in terms of departments and civil and medical infrastructure, for example, types of services offered, specialties offered and number of beds and medical equipment in each department.

1.4.2 Each health facility in HFR has a unique primary key or identifier in the form of Facility ID (FID), which will be used to map the facility across the health ecosystem. This unique identifier will be utilized by all other entities to identify the facility, retrieve and use required facility data for required purposes. The access to the details of the facilities will be through consented access, and facilities will be able to specify which details they share with different entities.

1.4.3 The registry allows health facilities to access their profile and update it periodically with specialties and services they offer along with other attributes, as well as provide a secure common platform to the facilities to maintain all essential information. All the changes occurring are maintained with version control, which helps to make the system transparent and accountable.

1.4.4 For the purpose of Health Facility Registry, the term “health facility” refers to health facilities across the country and includes hospitals, clinics, diagnostic centres, health and wellness centres, mobile vans, ambulances and pharmacies.

1.4.5 The current version of the Health Facility Registry, which was released as a pilot in the 6 Union Territories, is live at https://facility.ndhm.gov.in/. This existing version covers the minimal identifiable information required for registering health facilities on HFR in the six union territories. This verification process has been laid out in Clause 3.3, along with details on the proposed verification process.

## 1.5 Consultation Process

### 1.5.1 Previous Consultations

Prior to issuing this comprehensive consultation paper, NDHM sought inputs from the stakeholders on the broader framework of Health Facility Registry through the NDHM pilot being implemented in the 6 Union Territories and through the virtual sessions held with different groups of stakeholders to understand their needs.

Multiple consultations were held virtually to ascertain the response towards HFR and other building blocks of NDHM and get feedback to improve the functionalities. The following stakeholders were consulted through these sessions:

a) Regulatory Licensing and Certification Authorities
b) Private Insurance Companies and Third-party Administrators
c) IT Industry Service Providers
d) Health Facilities and Healthcare Professionals

A comprehensive report of feedback from these stakeholders was compiled and reviewed to incorporate the suggestions in HFR. **The key points of concerns raised were:**

- The anticipatory difficulties shared across this consultation were around lack of internet connectivity, nature of participation, use of standards and involvement of the private sector and on how they can be effectively engaged in this mission without compromising security and safety considerations of data usage.

- Current status of reachability and awareness: Current status of lack of internet connectivity & penetration in certain parts of the country which could make onboarding of facilities in such areas a tedious task, followed by lack of digital literacy and awareness amongst certain sections of the population. Voluntary participation may negate the comprehensiveness of health data envisioned to be collected through the platform.

- Technology resistance: Since the program is envisioned with an array of standards and technology usage for its implementation, there might be some form of resistance to the idea of technological implementation.

- Involvement of private players: The private sector is also a key stakeholder in the ecosystem and will be equally participating in the development of the NDHM platform. Some of the software providers to health facilities may require incentivization, especially in Tier 2 and 3 cities. There would be concerns in terms of data protection and privacy and its possible exploitation of such data for commercial gains amongst the private players.

The following suggestions were received from the stakeholders:

- Applications should be developed keeping ease of usage by healthcare professionals in mind, as they are not well versed with the use of application or electronic devices.

- There should be a provision of cloud storage and applications for facilities not having access to these and wanting to adopt NDHM systems.

- EMR systems for adoption by facility should have some classifiers based on acute and chronic diseases or based on the specialties because many of the subtle differences mentioned by the doctors are actually connected with a particular specialty.

- Prerequisites (software, hardware, any other requirements) should be provided, as it would require everyone to be prepared for roll out of NDHM in a smooth way.

- Security and privacy of the data residing on the cloud platform should be taken care of, as privacy of a patient is a major concern and there can be legal issues associated with it.

- As patient follow up is necessary, records that are captured at Health and Wellness Center or in a District Hospital, should be synced and made available when the patient is referred to any tertiary care hospital or vice versa.

- NDHM should take into consideration requirements where patients are not allowed to access their medical records, some records which a doctor keeps with themselves such as related to Mental Illness since it is mentioned in the Mental Health Act as well.

### 1.5.2 Issues for Consultation

Based on the inputs received from the stakeholders, international practices and internal analysis, this consultation paper has been prepared seeking the inputs of the stakeholders on the specific issues raised henceforth.

While designing any national registry, as has been ascertained by the analysis of the existing models, it's clear that for it to be the single source of truth there are certain critical fundamental issues that must be addressed and accounted for. For Health Facility Registry, these issues range from the primary concept of HFR to the various elements within the module - verification of data, management and access of data by different stakeholders, maintenance of registry, and more. Each of these points have been discussed in detail in the forthcoming chapters and proposed solutions have been presented.

This consultation paper provides an encyclopedic view of the Health Facility Registry and broad details on how it is being developed under the National Digital Health Mission. This is with a purpose to critically inform the reader and enable them to share their consults on the concerns/ issues raised in subsequent chapters.

### 1.5.3 Executive Summary

The paper consists of five chapters. Chapter 1 provides the background information and introduction to NDHM and Health Facility Registry (HFR); Chapter 2 provides the details about the pre-consultation process and the comments received from the stakeholders; Chapter 3, in brief, discusses the international practices followed by different countries in maintaining and implementing a master facility list or facility registry; Chapter 4 provides the detailed information on Health Facility Registry with respect to data usage, maintenance, and engagement of stakeholders and raises the issues; and Chapter 5 provides the issues for consultation.

# Chapter 2

# Setting the Context

## 2.1 Existing Facility Registries

2.1.1 There are multiple existing registries that function as a repository of data on health facilities across the country. For the purpose of NDHM Health Facility Registry (HFR), the following registries and databases have been studied:

1) NIN - National Identification Number
2) ROHINI - Registry of Hospitals in Network of Insurers
3) NHRR - National Health Resource Repository
4) PMJAY - Pradhan Mantri Jan Aarogya Yojana

2.1.2 While all of these registries hold, in isolation, a comprehensive set of data on various health facilities, no single registry serves as the single-most source of truth encompassing facilities across public and private domains and belonging to different systems of medicine. The following limitations were identified while studying the capacity of each of these registries:

1) Not Dynamic - The data in these registries is not updated in real time, limiting the usage of the information stored in their database
2) Not Universal - No registry covers the entire gamut of public and private facilities across all systems of medicine across the country, and therefore, doesn't offer a clear and consolidated picture of the number of facilities in different geographies
3) Not Comprehensive - No registry has an exhaustive set of information of health facilities with respect to civil and medical infrastructure that can be used in case of taking evidence-based decisions on resourcing and allocation

## 2.2 Need for Health Facility Registry

2.2.1 The Health Facility Registry, therefore, aims to bridge the gaps identified above and establish a single source of truth in terms of information on all health facilities in the country. It eliminates the following fundamental challenges currently faced by the healthcare ecosystem:

- Lack of a Unique Identifier: Health facilities across the country do not have a unique identifier which is recognized by an authority
- Inadequate Channels for Communication and Coordination: Implementation of healthcare interventions require coordinated effort of multiple healthcare professionals and current infrastructure does not provide tools for them to coordinate, nor does it provide the policy makers with granular ground truth

- Cumbersome Administrative and Regulatory Procedures: Health facilities are overburdened with administrative and regulatory work related to reporting and filing for licenses, permits, and accreditations
- Presence of Medical Deserts: Health facilities may be over-extending their resources to provide for healthcare needs of the population in underserved areas

2.2.2 The National Digital Health Mission is cognizant of the complex multi-stakeholder ecosystem a healthcare facility operates in and is committed to bring the entire ecosystem on board to make processes for a healthcare facility paperless.

## 2.3 International Models

To build a holistic, comprehensive, and ecosystem-friendly platform, an analysis of different digital systems being implemented across the world is imperative.

While there are a few developing countries that have a master facility list, very few developed nations have a national registry of health facilities that serves as a single source of truth. In the UK, the NHS covers the entire healthcare system and maintains statistics on all healthcare systems. More on how it functions has been covered in Clause 2.3.1. In the US, healthcare information is dominated by the major insurance companies and aggregators that maintain the data for health facilities covered under their empanelment.

One of the primary barriers the developing countries face in delivering quality healthcare and making evidence-based decisions on allocation of resources is lack of reliable, updated and comprehensive data on health facilities and their services. The World Health Organisation (WHO), to help nations solve that problem, built a guidance document on effectively creating and implementing a Master Facility List (MFL).

The guidance document published, and then adopted by several developing and underdeveloped countries - a few of which have been discussed below - reflects in detail upon the need for a master facility list, the various functions that need to be in place as a prerequisite for a functional and updated MFL, the implementation strategy, software requirements, as well as governance structures and other elements.

Herein is a brief overview on the HFR ecosystem as it has been built by two developing countries that have adopted the WHO model - Nigeria and Tanzania. We also discuss the public healthcare system in two developed countries - the United Kingdom and the United States of America.

### 2.3.1 United Kingdom

1. In the UK, the entire population is covered under the National Health System (NHS) which is governed by the Department of Health. The digital services of NHS are managed by NHS Digital which is the trading name of Health and Social Care Information Centre (HSCIC), a non-departmental public body of the Department of Health and Social Care.

2. While the NHS is governed by DoH, the responsibility of purchasing the healthcare services across the UK lies with individual countries. In England, it’s with the Primary Care Trusts; in Scotland, it’s with the

Health Boards; in Wales, it's with the local health groups and in Northern Irelands, it's with the Primary Care Partnerships.

3. NHS Digital is the digital arm of NHS, and is a central, secure system for patient data in England. This enables several services for patients, including:

- the Electronic Prescription Service, which sends prescriptions digitally from GP surgeries and other NHS providers to pharmacies, without needing a printed prescription
- the Summary Care Record which allows authorised NHS staff (such as hospital or ambulance staff) to see a summary of important information about a patient, to help give the best care
- the e-referral service which manages the booking of first time appointments with hospitals and specialists
- the Child Protection - Information Sharing system, which helps ensure that any child protection concerns are known by the NHS when they are treated

4. While the entire patient data is handled by NHS Digital, there is no master facility list that functions as the single source of information for all health facilities in the UK.

### 2.3.2 The United States of America (USA)

1. Unlike the United Kingdom, the US does not have a universal healthcare system, and therefore, there is no central database of health records or health facilities that are maintained. The healthcare in the country is predominantly managed by various insurance corporations and providers.

2. Each insurance provider and health system have their own health data repository which includes information of the facilities that are empanelled with their programme and the patients associated with each plan. Therefore, this is not an exhaustive set of data and only pertains to stakeholders associated with the particular insurance provider.

3. At the government level, National Center for Health Statistics (NCHS), which falls under the Centers for Disease Control and Prevention (CDC), publishes various healthcare statistics in the form of National Health Care Surveys that work in collaboration with several systems including Centers for Medicare and Medicaid Services (CMS), Electronic Health Record (EHR), Incentive Programs Promoting Interoperability (PI), and the Merit-based Incentive Payment System (MIPS). The registration in these surveys are free of cost and all eligible hospitals can submit their data to NCHS via them. The last survey statistics available for these is for the year 2016.

4. HRSA, Health Resources and Service Administration, which is an agency of the U.S. Department of Health and Human Services, also maintains a directory of healthcare centres for people that are 'geographically isolated, economically or medically vulnerable'. The data is updated regularly and the patients can access it to find the nearest primary health centres near their location. HRSA only maintains data for hospitals that are affiliated with its programmes.

5. Another source of information on health facilities is the U.S. National Library of Medicine (NLM) which maintains different directories of information like MedlinePlus. Users can log onto the NLM website and search for doctors, facilities as well as other providers. These directories are, however, not endorsed by NLM nor are updated in real-time and therefore are not the single source of truth for information on health facilities in the country.

6. The U.S. has been spearheading digital health efforts steadily since the last few years and a dedicated Digital Health Centre of Excellence has also been established by the government to amplify the efforts.

### 2.3.3 Nigeria

1. The Nigeria Health Facility Registry (HFR) was developed in 2017 as part of an effort to dynamically manage the Master Health Facility List (MFL) in the country. The Federal Ministry of Health had previously identified the need for an information system to manage the MFL in light of different shortcomings encountered in maintaining an up-to-date paper based MFL.

2. The development of the HFR followed a consultative process among the different stakeholders working within the Federal Ministry of Health, its agencies and development partners. A MFL Technical Working Group co-chaired by the Department of Health Planning Research and Statistics and the Department of Hospital Services was established.

3. Three state studies (FCT, Lagos and Cross River) to understand health facility registration process variation and identify potential workflow issues to be built into the HFR. Also opportunity for the retrieval of data collection tools used by the different states. Consultations were held with various regulatory agencies including a meeting between the HMH and all the regulatory agencies.

4. Each state had a different process for registering and identifying facilities. To establish Nigeria's MFL, the Federal Ministry of Health (FMOH) had to harmonize data from multiple facility lists. The goal of the process was to allocate new unique identifiers and eliminate duplication of facilities. An intelligent unique identification system was used to create new unique identifiers. Following this allocation, matching of independent identifiers across different information systems (those previously deployed in the country) was attempted.

5. A manual matching process was employed—any facility records that were a 100% match were considered similar records and the data in the other system was used to improve the information from the primary MFL that the FMOH had compiled. Any facility records that were a partial match were reviewed further by the FMOH. The FMOH was responsible for verifying whether the data were associated with one or more than one facility and entering the verified facility information into the MFL.

6. Through the dedicated efforts of the MFL champions in Nigeria, the government now sees the importance and utility of having an MFL that is accurate and continuously updated. The government is discussing with partners how to achieve this goal.

### 2.3.4 Tanzania

1. Health Facility Registry (HFR) is an online tool to provide public access to a database of approved information about all health facilities in Mainland Tanzania. The Ministry of Health and Social Welfare owns and maintains the data in the HFR database. The HFR is also the source of the Master Facility List, which is the official source of health facility information for the health care sector.

2. Information about health facilities are collected by a member of the Council Health Management Team or the Health Management Information System focal person of each council. The information is collected using a data collection form and Global Position System (GPS) receiver.

3. A member of Council Health Management Team or the Health Management Information System focal person of each council uses a separate online tool, the HFR Curation Tool, to enter and edit facility data in the HFR database. All changes to the data are reviewed and approved by the Department of Curative Services at the Ministry of Health and Social Welfare headquarters. Once data about a facility has been approved, then facility information will be displayed in this public portal.

4. Anyone may use this website to access approved data for health facilities from the HFR database. Users may search and view this information in lists and maps, and download the information in Microsoft Excel spreadsheet format.

5. The HFR database includes health facilities that are currently operational, closed temporarily, closed permanently, under construction, and completed, but not yet in operation (not yet providing health services). These health facilities are categorized by type and ownership. By default the downloaded list includes only operating health facilities. Information for other health facilities may be obtained through advanced search, and then downloaded.

6. The HFR system is designed to improve the Master Facility List as the official source of health facility data for the healthcare system. The HFR and the Master Facility List are part of an integrated health information system that includes DHIS2. This integrated information system is vital to improving health care for all Tanzanians.

## 2.4 Key Learnings

Studying the above international models of a national health facility registry, there are some key learnings that come to light.

- **Involvement of Multiple Stakeholders:** The successful implementation of a national facility registry involves active participation of stakeholders at the central, state and local level, including the administration and other civil bodies. A defined governance structure is key to maintaining an updated and dynamic registry that serves as the single source of truth.

- **Focus on Reliable Data:** All data entered in the registry needs to be verified and completed for it to serve as one comprehensive source of information on all health facilities. While district

administrations are ordinarily given the task to conduct this assessment, to maintain transparency and objectivity of the data, it is essential to build a layer of verification. This is essential to drive ecosystem adoption of the registry by building trust in the data.

- **Scope of Benefits:** The potential benefits of an updated and functional master facility list reach far beyond simply administrative. A comprehensive HFR can be significant in building key health technological infrastructure in domains of health insurance claims, delivery of quality healthcare, maintenance of electronic medical records, among others. The analysis of the existing registries makes it clear that these benefits haven't been explored by them yet.

## 2.5. Key Issues for Consultation:

In this chapter, three key dimensions that lay the framework for analysis were discussed: (1) the challenges of existing registries of health facilities in India, (2) the need for a Health Facility Registry, and (3) the models adopted by other developing countries to maintain the database of health facilities and other related digital systems, along with the overarching concept of Master Facility List as published by WHO. Before we launch into the next session, the below questions are posed for public comment:

- As referenced in Clause 2.1 of this paper, are there any other technical, operational or structural challenges that exist in India that may be addressed with a nationally recognized platform such as the HFR?
    - How should these gaps be prioritized for solutioning?
    - Are there examples of robust digital registries of health facilities that are widely adopted and used in India?

Please elaborate.

- As discussed in Clause 2.3, are there other international case studies or best practices that should be studied to inform the design of the HFR platform?
    - Which best practices should be adopted from these international models?
    - How do we tailor these best practices for the Indian context?

Please elaborate.

# Chapter 3

# Health Facility Registry

## 3.1 Key Guiding Principles of HFR

The key fundamentals guiding the development and implementation of the Health Facility Registry have been defined in the National Digital Health Blueprint (NDHB). The following features form the core of HFR:

- **Voluntary Opt-In:** Health Facilities may choose to enlist, maintain, and verify their information on HFR at their discretion. Participation in NDHM, and therefore HFR, is entirely voluntary. Participation in NDHM, and therefore HFR, is entirely voluntary.

- **Voluntary Opt-Out:** At any given point, a Health Facility will have complete control over its data. The Health Facility is free to rescind any permits with respect to sharing facility data given earlier and delete their facility data from the health facility registry, as they may choose. However, if the health facility still exists in the NDHM ecosystem, it can't delete the data entered in the mandatory fields in HFR.

- **Facility ID:** The HFR is designed to ensure that the contents are unique and there is only one entry for each unique facility. The system will include methods to ensure duplicate entries cannot be created.

- **Self – Maintainable:** Entities listed in the registry will be able to view their information and through appropriate workflows be able to update their information in a verifiable and trusted manner.

- **Easily accessible:** Authorized users will be able to easily access relevant information in HFR using open-APIs.

- **Identity Access Management:** Health applications will be able to verify a health facility using the registry and allow access to specific authorized records.

- **Accountability and Data Provenance:** A verification trail will be maintained for all changes made to entries in the registry.

- **Interoperable and Scalable:** The HFR will be interoperable with other building blocks of the National Digital Health Ecosystem and will be able to scale vertically and horizontally as the need arises.

- **Links to Existing Databases:** While the HFR aims to be a comprehensive registry, it will maintain references to existing repositories such as NIN and NHRR, enabling these repositories to access the larger NDHM ecosystem.

- **Access to Data:** With explicit consent of the health facility, the data in HFR will be made available in PDF and Excel formats, standard machine-readable formats and through a set of APIs to authorized users upon request.

## 3.2 HFR Data

HFR aims to enable a multi-faceted, integrated, and robust digital environment to positively affect ease of doing business for stakeholders of Indian healthcare ecosystem and consequently, delivery of quality healthcare. To that effect, we now discuss the core elements of the Health Facility Registry.

HFR Data refers to the information or data attributes that are included in HFR for each health facility. These attributes include both administrative information that can be used to uniquely identify and locate a facility - Minimum HFR Data - and service-capacity information that tells the medical and civil infrastructural details of the facility - Detailed HFR Data - with respect to the specialties offered.

The categorisation of the fields in the registry has been done according to the following data schema.

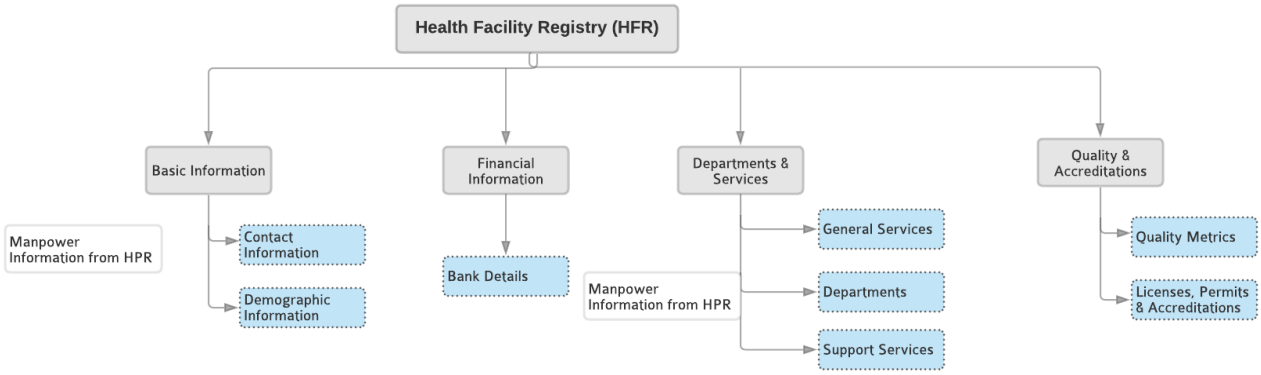


*Fig. 2. Data Schema for Attributes Grouping in HFR*

Under NDHM, to ensure interoperability, different registries have been integrated together for seamless information exchange. The information on manpower in HFR (medical staff employed by the health facility including doctors and nurses), therefore, will be imported from the Healthcare Professionals Registry (HPR) that hosts verified information of all healthcare professionals.

### 3.2.1 Minimum HFR Data

The Minimum HFR Dataset includes the key identifiable data fields required to be filled by a facility to be issued a FID. The information is restricted to the administrative and geographic details, along with fields

on general services offered by the facility - minimum details that remain significantly unchanged over time and therefore, form the fundamental data of a health facility. The entire list of fields proposed to be included in minimum HFR data has been attached with this consultation paper as an Annexure 1.

### 3.2.2 Detailed HFR Data

To ensure the adoption of HFR by various stakeholders in the healthcare ecosystem, the registry will capture advanced information of the facilities as well. This includes data attributes that cover the department-specific services, infrastructure and manpower at the facility.

After the minimum HFR data fields have been filled, the facility has the option to submit detailed information on departments and services, medical and civil infrastructure, quality metrics and accreditation, and more. This data is useful for resource and budget planning and compared to the minimum HFR data, tends to be updated more frequently, and is therefore, optional.

The entire list of fields proposed to be included in the detailed HFR data has been attached with this consultation paper as an Annexure 2. In the first phase, the following stakeholders have been included in the detailed attributes list of HFR:

**1) Licensing & Certification Authorities/ Acts**

- Atomic Energy Regulatory Board (AERB)
- The Clinical Establishments Act (CEA)
- National Accreditation Board for Hospitals (NABH)
- Bio-Medical Waste Management Act (BMWM)
- Pre-Conception & Pre-Natal Diagnostic Techniques Act (PCPNDT)

**2) Insurance Companies & Third Party Aggregators**

**3) Government Health and Insurance Schemes/ Programmes**

- PMJAY - Hospital Empanelment Module (HEM)
- Central Government Health Scheme (CGHS)
- Ex- Servicemen Contributory Health Scheme (ECHS)
- Employment State Insurance Scheme (ESIS)
- NIKSHAY (TB programme)

### 3.2.3 HFR Data Specifications

HFR data specifications allow for each data attribute in HFR to be defined and formatted for data entry so that the information collected and stored in the registry is standardized and consistent across all categories of health facilities.

Each attribute in HFR is defined against international data standards and is FHIR compliant. For each attribute, the following specifications will be clearly published in the form of HFR Data Standards:

a) **Definition:** Simple description of the data attribute

b) **Data Rules:** Each attribute will have a list of conditions applied to it. This includes:

- Number of characters
- Type of string: Use of letters, numbers, and symbols (including accents)
- Capitalization rules
- **Language** (including when to use symbols and accents)

c) **Mandatory or Optional:** Some data fields are mandatory for a facility to fill to get a facility ID - these are marked as mandatory. Other additional information may be optional for the facility, depending on the case

d) **Assigning Missing values:** Each data attribute has inbuilt rules that differentiates missing information from value zero. Error codes or specific values may be used to signify missing information entries.

All these data specifications, including definitions, shall be made public through HFR Data Standards, that will be published by NDHM to enable all health facilities and users of HFR data to conform to the NDHM standards.

### 3.2.4 Key Issues for Consultation

Details on the datasets being included in the HFR have been discussed above, along with the data schema used to group the fields. The files for both sets of data, minimum and detailed, are attached as annexures 1 and 2 with this paper.

Concerned stakeholders are invited to share their views and comments on the following questions pertaining to HFR Data.

1. Is there any modification needed in the data schema followed for categorisation of the data fields in HFR? Please go through the structure and share your views on whether any additional categories are needed and/ or if any of the existing categories should be eliminated.

2. The minimum HFR data fields are attached as an Annexure 1 with this paper. The fields are marked as mandatory and non-mandatory for a health facility to fill. While some fields are optional, the minimum HFR dataset is essential for a health facility to fill to generate their Facility ID. Please go through the fields and share your views and comments on whether there should be any changes in terms of adding/ deleting/ modifying fields and keeping the respective fields mandatory/ non-mandatory.

3. The detailed HFR data fields include a comprehensive set of fields that collect information pertaining to a health facility's medical and civil infrastructure, along with specific manpower information. The source directories for these fields have been listed in Clause 3.2.2 of this paper.

Please go through the same along with the detailed list of attributes attached as an annexure and share your views/ comments on:

a. Are there any other entities (licensing/ certification authority, government programmes, insurance providers, etc) whose registration process should be considered for inclusion in the detailed HFR dataset in the initial phase? Please note that the entity should directly be granting a license, permit, empanelment or certification to a health facility.

b. What should be the process flow for a health facility registering on HFR to fill these detailed fields? A health facility can either fill these fields only while applying for the particular license/ permit/ certificate/ empanelment, or fill these irrespective of the said business.

## 3.3 Health Facility Verifier

A 'Health Facility Verifier' refers to an independent, third-party legal entity enrolled in NDHM that is responsible for the verification of data in the HFR.

In the current version of the HFR module, only the existence of the health facility that has registered on HFR is verified by the State/ UT administration. The latter's function is to physically verify whether the facility exists at the said location or not. This is the preliminary step in verifying the information entered by the health facility.

However, the key central driver for stakeholders willingly adopting and integrating the Health Facility Registry is hinged on ensuring that the data available in the directory is updated, accurate, and complete. While the hospital with the multiple benefits that the HFR offers may be obliged to keep the data updated, it has been ascertained that there is a need for an external entity to verify and validate the data on a regular basis and add information to the HFR where requisite data may be missing.

Regularly verified information in the Health Facility Registry not only helps in ensuring better standards of hospital maintenance but also has the potential to obviate several cumbersome and expensive checks. These checks, which may be adding to the burden of the Government or the hospital, can be replaced by an external, qualified third-party verifier. It is proposed that a Health Facility Verifier perform this function.

The verification process is primarily facility driven and is entirely voluntary on the part of the registering facility. If the facility intends to verify the fields in HFR, it can undertake the services of the Health Facility Verifier, making the process market-driven and free of any mandates.

**In such a case where the facility does not undertake the verification process, the fields in HFR shall be marked as self-declared, as has been explained in clause 3.7.1 of this consultation paper.**

Let's discuss the key elements constituting the Health Facility Verifier before proceeding to the issues for consultation.

### 3.3.1 Eligibility to Become a Health Facility Verifier

The criteria for an organisation to be deemed eligible for empanelment as a Health Facility Verifier in NDHM has been proposed as follows. An organisation should belong one of the following categories:

- A Central/ State Government Ministry/ Department or an undertaking/ entity/ division owned and managed by Central/ State Government
- An entity constituted under the Central/ State Act
- A company registered in India under the Indian Companies Act 1956 which is responsible for auditing other firms / entities
- A limited liability partnership incorporated under the Limited Liability Partnership Act, 2008 and other applicable laws
- A society incorporated under the Indian Societies Registration Act, 1860 or other state applicable laws
- A trust incorporated under the relevant state or central laws
- Organisations already empaneled with statutory and regulatory authorities including Insurance Regulatory Development Authority, The Clinical Establishments Act, Quality Council of India, and other statutory bodies

### 3.3.2 Role and Responsibilities of a Health Facility Verifier

An organisation can apply to become a Health Facility Verifier provided it fulfills the eligibility criteria as mentioned above. The Health Facility Verifier has the responsibility to onboard, train and allot the individual verifiers under its operations. The Health Facility Verifier as an entity bears the onus of ensuring that the individual verifier acts in good faith and correct data is entered in HFR and the data verification portal.

Health Facility Verifier may have to be paid a fee against the verification services offered by the health facility that's requesting the service. The pricing of the verification may be set by the Health Facility Verifier. Additionally, the following roles and responsibilities are proposed to be assumed of a Health Facility Verifier.

- Health Facility Verifier may enter data, collect evidence and verify the data in Health Facility Registry

- Health Facility Verifier may share the results of verification as per the pre-defined standards and guidelines by NDHM

- An entity deemed to be a Health Facility Verifier may undertake the verification process by either using NDHM Health Facility Verifier Platform or building their own platform and integrating it with NDHM through APIs (explained further in the paper)

### 3.3.3 Selection and Onboarding of Health Facility Verifier

There needs to be a committee or an entity that oversees the application process of becoming a Health Facility Verifier. Here, we explore two alternatives to conduct the selection and onboarding of verifiers.

#### Alternative 1

The onboarding and training of the Health Facility Verifier shall be done by a standing committee. The role of the committee shall be as follows:

- Shortlist the applications with respect to the eligibility criteria
- Verifying the credentials of the shortlisted applicants
- Verifying the capability of the applicant to undertake the health facility verification process

The responsibility of drafting the guidelines and module for the selection, onboarding and training of the Health Facility Verifier shall be with the assessment body, National Accreditation Board for Certification Bodies (NABCB), that currently does the same for other organisations.

The Health Facility Verifiers will be governed by the guidelines mentioned in the NDHM Health Facility Registry Verification and Usage Policy (to be released by NDHM) along with any other applicable laws and policies.

#### Alternative 2

The second alternative here is that the entire responsibility for the selection, onboarding and training is taken by the National Health Authority (NHA) itself instead of an independent standing committee. In this scenario, NHA may form an internal team specifically for overlooking the applications, shortlisting and verifying the applicants.

The Health Facility Verifiers will be governed by the guidelines mentioned in the NDHM Health Facility Registry Verification and Usage Policy (to be released by NDHM) along with any other applicable laws and policies.

### 3.3.4 Health Facility Verifier Technology Platform

There is a need for a dedicated, interoperable technology portal to enable a Health Facility Verifier to verify and update the data in HFR. The verifier portal shall be accessible only by the registered Health Facility Verifier once the consent has been shared by the Facility Manager. This platform is then linked to the HFR data entry platform and the updated, verified data is communicated to the latter from the former through APIs.

There are two alternatives here for the development and maintenance of the verification platform.

### 1. NDHM Health Facility Verifier Platform

In this alternative, the NDHM Health Facility Verifier Platform is proposed to be developed, owned and maintained by the NDHM as a core application. NDHM may provide a login for the Health Facility Verifier Platform to the Health Facility Verifier; the latter may create individual logins for the entities it employs for verification of health facilities.

Only after a Facility Manager gives consent to an Health Facility Verifier in the HFR Portal for accessing the data in HFR for the purpose of verification, will the Health Facility Verifier get access to the HFR data via NDHM Health facility Verifier Platform.

### 2. Independent Health Facility Verifier Platform

Under this alternative, NDHM may build the technology portal as a common building block and then allow other players in the market to replicate the platform; individual organisations eligible to become a Health Facility Verifier and enrolled in NDHM have the freedom to develop independent data verification platform for verification of Health Facilities, provided that the platform complies with the guidelines set by NDHM and is integrated with HFR using NDHM APIs.

## 3.3.6 Verification of Facilities Empanelled with Trusted Entities

For facilities already empanelled with various trusted entities, such as government health and insurance programmes, can be exempted from the process of verification since the process has already been undertaken by the empanelling entity.

These trusted entities and their scope of trust will be defined by NHA and NDHM from time to time and the exemption shall be granted on a case by case basis.

## 3.3.5 Benefits of Health Facility Verifier

- Third-Party verification for Facility data will encourage stakeholders to integrate with NDHM and accept the data in HFR to issue certificates/ empanel facilities/ other associated services.

- This may represent significant cost savings for the facilities who may have had to pay for these verifications/audits to individual organizations; further, the regular, time bound verification by HFV may result in a significant amount of time being saved.

- As applications for permits, licenses, empanelment may directly consume and autofill the verified data in HFR, upon entering the Facility ID, the healthcare facility may save a significant amount of time in applying for the aforementioned certifications.

- The verified data may also allow facilities to apply for accreditations faster.

- For policy makers, verified, updated data represents an opportunity to plan for targeted interventions.

### 3.3.7 Key Issues for Consultation

We have discussed in detail above different aspects of Health Facility Verifiers, proposing the eligibility criteria, selection and onboarding process, as well as the technology to streamline the entire process. Herein, you are invited to share your comments on the following.

1. As mentioned, the UT administration currently physically verifies the existence of the facility as a preliminary step in the health facility verification. This can be a drain on the administration's resources and takes significant time and effort since it's a manual verification. Please share your views on the current process and share any alternative methods of verification you can think of to make this process faster and seamless. For instance, in some instances, the general public can be called upon to verify the information through crowdsourcing. Please evaluate the risks associated with the alternate methods and share your views.

2. The concept of Health Facility Verifier has been introduced to conduct the assessment and verification of the detailed HFR data fields and build trust in the registry. Since this is a novel concept in the Indian healthcare ecosystem, share your views on the terminology and if nomenclature should be changed from 'Health Facility Verifier'.

3. Above, the criteria has been proposed for an organisation to be considered eligible for applying as a Health Facility Verifier. While the effort has been made to make the parameters comprehensive and inclusive, it is imperative to have views of all stakeholders. Therefore, comments are invited on the proposed criteria and whether modifications are needed to include/ exclude a parameter or a category of organisation.

4. For the selection and onboarding process, two alternatives have been discussed in Clause 3.3.3. Both approaches have their merit and a foundation to support them. Comments are invited from concerned stakeholders on the approach that should be followed to ensure complete transparency and objectivity in selection and onboarding of the Health Facility Verifiers.

5. The layer of verification by Health Facility Verifier is technologically supported by a verification platform, as discussed in Clause 3.3.4. Two approaches are mentioned in these clauses - a platform built and maintained by NHA or a common building block developed by NDHM as the technology portal and then independent platforms built and managed by prospective verifier organisations, respectively. Comments from stakeholders are invited on the merits and demerits of both approaches and share their views on which option (or both options) should be considered.

## 3.4 HFR Organisation/ Programme

HFR Organisation/ Programme Entities are entities engaged in activities including but not limited to granting licenses and certification to health facilities, implementing the government health and insurance programmes and schemes, empanelling hospitals as insurance companies and third-party administrators, and actively utilising a health facility's data in the aforementioned activities. These entities are an integrated part of NDHE by undergoing a Sandbox entry and exit process as laid in the NDHM Sandbox Guidelines or through the digital solutions designed and developed for them by NDHM.

### 3.4.1 Eligibility to Enroll as a HFR Organisation/ Programme

For an entity to be enrolled in NDHM as a HFR Organisation/ Programme, it is proposed that the following criteria apply.

- Body recognised by central or state government that has been given the legal mandate to grant a license, certification or accreditation of any nature to a health facility.
- A body that has been entrusted by the central or state government with the implementation of government health programmes or schemes.
- A body that has been entrusted by the central or state government to implement activities pertaining to the government health insurance programmes or schemes.
- Any private or autonomous body involved in granting empanelments or certifications to health facilities.

### 3.4.2 Roles and Responsibilities of HFR Organisation/ Programme

The scope of responsibilities and engagement of an HFR organisation/ programme within NDHM is proposed to include the following.

- HFR Organisation/ Programme can integrate with HFR by either using the open APIs developed by NDHM or through the digital solutions as developed for them by NDHM for accessing HFR data.

- If such an entity conducts an independent verification of HFR data for their business purposes, the same shall be communicated to HFR via the aforementioned open APIs or the digital solution developed for them.

- If the verification conducted by the organisation/ programme results in a significant business event for the health facility, for instance, granting or suspension/ cancellation of a license by a licensing and certification authority or empanelment/ de-empanelment of the facility by an insurance provider, the same shall be communicated to HFR via the aforementioned open APIs or the digital solution developed for them.

- HFR Organisation/ Programme may raise a request to NDHM to add fields in HFR as deemed necessary for their business purposes. NDHM shall take a decision on such requests on a case-by-case basis.

### 3.4.3 Integration of HFR Organisation/ Programme

HFR Organisations/ Programmes can integrate with the NDHM ecosystem in two ways.

#### 3.4.3.1 Integration via APIs

NDHM shall develop open APIs for these entities for the import and export of data. Once the request to enroll as a HFR Organisation/ Programme is approved by NHA, the entity will get access to the NDHM Sandbox and will have to undergo the end-to-end entry and exit process as defined under the NDHM Sandbox Guidelines here (https://ndhm.gov.in/documents/sandbox_guidelines) to get onboarded in NDHM.

#### 3.4.3.2 Digital Solutions for Organisations/ Programmes

For entities that are recognised by or are a part of the Government of India and don't have an online application system or a payments interface, NDHM may consider building such digital solutions that allow their processes to move from an offline to online environment and hence, enable the organisation to become a part of the digital health ecosystem.

In such a scenario, NDHM may act as a solution provider and serve as an e-services portal for facilities, wherein they can apply for empanelment, licenses and permits directly on the portal.

While it may use the NDHM digital solution, the Organisation/ Programme Entity shall always have complete control and autonomy over their business processes.

#### 3.4.3.3 APIs and Digital Solutions

While some entities have robust digital systems that can readily integrate with NDHM, some are yet to transition to digital processes. Therefore, the third alternative offers both methods of integration - open APIs as well as building of specific digital solutions. This may allow for more flexibility and a wider scope of integration for various stakeholders.

### 3.4.4 Key Issues for Consultation

Above, we have discussed the facets of an HFR Organisation/ Programme and introduced how they will function within the NDHM ecosystem. The points proposed raise some key questions that are open for comments from concerned stakeholders.

1. Similar to Health Facility Verifier, an HFR Organisation/ Programme is a novel concept that hasn't been defined before in the Indian healthcare ecosystem. Therefore, the consultation is open on the terminology/ nomenclature as well as the definition of the concept.

2. The proposed eligibility criteria and scope of function of an HFR Organisation/ Programme is also open to scrutiny and comments from stakeholders. Any entity directly or indirectly using the HFR data is invited to share their consultation on the defined criteria and list of responsibilities to make it as comprehensive and structured as possible.

3. There are three alternatives discussed in Clause 3.4.3 for an HFR Organisation/ Programme to integrate with NDHM, and specifically, with HFR. These methods have been built based on the feedback received from the multiple meetings held with some stakeholders and the concerns raised by the pilot in 6 UTs. Please go through each process and share your views on which approach should be adopted by NHA to engage with these organisations/ programmes with valid reasons.

## 3.5 Ecosystem Adoption of Health Facility Registry

The fundamental value and purpose of the Health Facility Registry lies in its adoption by the larger ecosystem and the ability of the other players to access and use the data stored in the registry for their business purposes.

Key stakeholders identified in the HFR ecosystem are:

- Health Facilities (including Hospitals, clinics, laboratories, and pharmacies)
- Healthcare Professionals (including Doctors and Nurses)
- Patients/ Individuals
- Licensing and Certification Authorities
- Health Insurance Organizations and Third-Party Administrators
- Organizations implementing Health Programmes including Health Insurance/ Assurance schemes
- Consumer Healthcare/ Technology Organizations
- Development Organizations and NGOs
- Financial Institutions
- Pharmaceutical and Medical Equipment Industry
- Academia and Research Institutes
- Representative Industry Organizations

Incentive discovery and defining the attributes for each stakeholder is an ongoing activity within NDHM and for HFR. Incentives for key stakeholders and the proposed process of their integration with HFR in initial phases are described below:

### 3.5.1 Government Health Programmes

Government Healthcare Programmes and Initiatives are the primary mode for provision of healthcare to a majority of Indians. Major public health problems like malaria, tuberculosis, leprosy, high maternal and

child mortality and human immunodeficiency virus (HIV) have been addressed through a concerted action of the government through these programmes.

The data of healthcare delivery from these programmes is fragmented and exists in silos. National Digital Health Mission is a unique opportunity to integrate the data across different vertical programmes. For the integration of data and systems, Health Facilities, which act as nodal points for delivery of these programmes, will need to be identified across programmes.

Allotting a common identifier for a health facility across various programmes may be carried out by making Facility ID (FID) as the primary/ mask identifier.

### Incentives for Health Programmes

- Allows for an organized view of all facilities in the country and the services offered in each
- Verified data may be fetched form HFR on request, obviating the need for regular reporting on facility data by a Data Entry Officer
- Can be the first stage for digitizing services provided by the Programme
- Allows for better coordination between programme teams
- Can help in identifying medical deserts and underserved areas
- Will increase the accountability of the healthcare facilities in the programmes
- Allows for efficient fund and resource allocation

### Integration with Health Programmes

- The health facility registry will aim to contain all attributes of the facility which are required by a particular programme.
- Mapping of all facilities under a programme to Facility ID in HFR by the programme team - Programme should be able to uniquely identify a facility with the FID without need for a separate program-specific ID.
- Integration of one programme's digital system with HFR via APIs
- Integration with existing facility databases such as NIN via APIs
- Facilities can be linked to health workers and other facilities to replicate hierarchies in the systems of the programmes.

## 3.5.2 Government Insurance Schemes

As India moves towards UHC, a larger part of the population's health costs is covered by the central and state level government insurance schemes. These health insurance schemes are aimed at providing health coverage for most people including the marginalized sections of the society.

The entire government funded insurance ecosystem in India encircles more than 40 different insurance schemes. Public/private hospitals are contracted by the Insurance companies to provide services to the enrolled beneficiaries. The insurance company then reimburses per service to the hospitals based on the

claims made by the beneficiaries. Integrating these insurance schemes with the processes of health facility registry have clear benefits for both the healthcare providers and the central and state governments.

### Incentives for Government Insurance Schemes

- A Health Facility Registry will be regularly updated, validated, and built with easy accessibility of data.
- This information can be accessed by States and Central Schemes along with accreditation and conformity assessment bodies like National Accreditation Board for Hospitals & Healthcare Providers (NABH-QCI) that has been entrusted with the task of assessing hospitals as per set criteria for empanelment of Hospitals with Central Government Health Scheme (CGHS) and Ex ServiceMen Contributory Health Scheme (ECHS)
- Transparency in empanelment and de-empanelment process
- Time bound processing of all applications
- Increased visibility of the health facility network under an insurance scheme

### Integration with Government Insurance Schemes

- All attributes required for onboarding facilities within these government health insurance schemes are included in HFR.
- Complete onboarding of an insurance schemes, with their empanelment details displayed as a part of HFR.
- Integration of insurance process via APIs
- Execution of a paperless empanelment of a health facility by an insurance schemes using data from HFR.

## 3.5.3 Insurance Companies & Third-Party Administrators

Public/Private Hospitals are contracted by the insurance organizations to provide services to their enrolled beneficiaries. The insurance company then reimburses per service to the hospitals based on the claims made by the beneficiaries. Insurance companies often outsource their claims processing and other operational services to third parties on behalf of an Insurance provider.

There are more than 50 insurance providers and Third-Party Administrators (TPAs) operating in the insurance ecosystem. These providers offer individual as well as group insurance schemes.

Digitizing the hospital empanelment process and developing digital tools for fraud free and efficient claims processing hinges on the crucial integration of insurance IT systems with the Health Facility Registry.

### Incentives for Insurance Providers

- The registry will enable paperless empanelment as a standardized e-facility record can be shared from the registry with consent.

- Provides a comprehensive list of all details which have been independently verified required by a stakeholder.
- Obviates the requirement for a verification by the stakeholder for empaneling the health facility; easing and fast-tracking the empanelment process.
- Provides geocoded data on the health facilities in a country that can facilitate the planning, management and targeting of services through mapping and visualization of the distribution of health services and resources.
- Increased visibility of the health facility network under an insurer/ TPA
- Potential for future integration in health claims platform

#### Integration with Insurance Providers

- All required attributes for facility empanelment are present in HFR.
- Complete onboarding of an Insurance Organization, with their empanelment details displayed as a part of HFR.
- All participating insurers and TPAs enable facility empanelment via the FID
- Verification mechanisms for insurance providers to drive trust in HFR are built and operationalized
- Integration of Insurance process via APIs
- Execution of a paperless empanelment of a health facility by an Insurance Organization using data from HFR

### 3.5.4 Licensing & Certification Authorities

Large hospitals providing varied services may require over 80 license, permits, certifications or accreditations from over 60 National, State and District authorities. Most of these licences/ certifications have limited validity. As many organizations granting these licences and certifications may not have digital systems to keep track of the existence, expiry and applications, there is a possibility that the healthcare facilities operate without the requisite permits.

Integrating licensing and certification authorities with the processes of health facilities have clear benefits for both the authorities and the hospitals.

#### Incentives for Licensing & Certification Authorities

- Provides a comprehensive list of all healthcare facilities which may require a license
- Possibility of digitizing systems using tools introduced by health facility registry free of cost
- Pre-validation of all required information
- The authority may leverage verification done by other authorities/ verifiers/ auditors
- Streamlining workflows and reduction of backlogs

#### Integration with Licensing & Certification Authorities

- All data attributes required by each authority shall be included in Detailed HFR Data

- L&C authority should be able to import data directly from HFR portal for issuing statutory documents using APIs.
- Any updates in terms of change of certification status or verification of the facility done by the authority should be communicated back to HFR, therefore, establishing a free, two-way exchange of information between the two systems.
- The paper-based licensing process of the authority shall be transitioned to online systems.
- For a digitally enabled L&C, all the historical licenses granted to health facilities be mapped to Facility ID.

### 3.5.5 Other Stakeholders

Apart from the entities defined above, there are several other stakeholders in the ecosystem who, while may not be directly involved in the delivery of health services, will certainly benefit from an updated and verified registry of information of the health facilities which they can access through open HFR APIs and integrating with NDHM Sandbox.

#### Open APIs and Sandboxes

National Digital Health Blueprint plans to, with the consent of health facilities which will be onboarded, open source some of the information held in the registry.

This information will be made accessible via Open APIs and NDHM sandboxes, where stakeholders may choose to integrate and test their solutions. There may be cases where other stakeholders can add further credible information to the Health Facility Registry, which may require some additional provisions to be created in the Registry. All such cases will be entertained on a case by case basis.

A prospective list of stakeholders who may integrate with HFR using Open APIs and Sandboxes includes, but is not limited to:

- Consumer Healthcare/Technology Organizations
- Development Organizations and NGOs
- Financial Institutions
- Pharmaceutical and Medical Equipment Industry
- Academia and Research Institutes
- Industry Organizations

### 3.5.6 Key Issues for Consultation

In this section, various potential stakeholders in the creation of the HFR platform were outlined. In order to provide a basis for consultation, a number of potential incentives for each of these stakeholders were outlined as well. These incentives are not an exhaustive list - they are intended to be a list of potential applications of the registry. Public comments are requested on the following key questions:

1. Please go through the list of stakeholders mentioned above. Is this a comprehensive list of stakeholders for the HFR platform?

- Are there key stakeholders that have not been addressed?
- Should any of the listed stakeholders be considered 'out of scope' for the HFR platform?

2. For the stakeholders listed, incentives have been outlined to define ecosystem adoption and application of the registry.
    - Are these potential incentives / product applications framed in accordance with the stakeholders mentioned and their business purposes? Is there any other incentive that can be included in the HFR module for any stakeholder?
    - What are the risks associated with these potential applications / incentives?

## 3.6 Maintaining a Functional HFR

To ensure that the Health Facility Registry is functional and dynamic at all times, the following points need to be noted:

a) HFR is comprehensive, including all health facilities in the country.
b) HFR has an established minimum data content that includes unique identifiers for each facility
c) HFR data are current and have been verified within a stipulated time frame
d) HFR information is updated regularly and the updating process is supported by an established set of standard operating procedures
e) HFR is visible and accessible to key stakeholders and data consumers (i.e., users of HFR data)
f) HFR online portal facilitates sharing, interoperability, and communication with other systems
g) HFR meets the needs of data consumers and provides incentives for players to adopt it
h) Data consumers have confidence in the data and are assured that the data are valid and complete

## 3.7 Data Management in HFR

All health facilities in the NDHM ecosystem that are enrolled on HFR may opt for verification of the information entered by them in the registry. The status of each data field changes based on the verification done by any third-party. All audit logs are maintained, and the standards defined in the National Digital Health Blueprint are followed by the HFR.

### 3.7.1 States of Data

All data in HFR, unless by a Health Facility Verifier or an HFR Organisation/ Programme, shall be presumed as 'self-declared' by the health facility.

Once the verification has been undertaken and the final data has been communicated to HFR, the status of that particular data field shall be updated to 'Verified' or a blue-tick will appear next to the field, signalling that the field is verified. The details of the verification shall be displayed on the screen as audit logs while hovering on the attribute.

Since the process is voluntary on the part of the facility, the verification is undertaken only for those attributes in HFR that the facility wishes to verify.

### 3.7.2 Standards for Reliable Data

HFR follows the standards for reliable data as set out in the National Digital Health Blueprint for all registries under NDHM. Adapting those standards for HFR, the data in the same shall adopt the following standards:

- Immutability: HFR Data once created cannot be deleted or modified without following due process
- Versioning: Any data in HFR may be 'amended' with a new version number of the same data with any changes
- Non-Repudiation: All data created and submitted in HFR must be traceable to its creator unambiguously
- Audit Logs: All creation, amendments, access of data should be audit logged in a manner that it is verifiable and reliable. Each attribute, once verified by the Health Facility Verifier or any other entity, shall have a stamp of time, date and the name of the entity against it, along with the changes made by that entity. The users of data in HFR have the full independence and autonomy to choose which information to trust from the portal
- Consent-based Access: The Facility Manager will be able to access/ view their own data anytime, and control access by others by sharing their consent at every instance of data sharing with other stakeholders

### 3.7.3 Display of Data

#### 3.7.3.1 Public Data

A predefined set of data attributes of a health facility shall be mandatorily displayed for public view. This includes the following data fields:

- Name of the health facility
- Address of the health facility
- Year of establishment
- Geolocation (latitude and longitude)
- Photo of the Health Facility
- Ownership type
- System of Medicine Offered
- Specialties offered
- Total number of beds (OPD and IPD)

The definition of ‘public data’ may be changed by NDHM from time-to-time based on the modification of fields in HFR.

#### 3.7.3.2 Consented Data

Any data attribute not mentioned in the list of ‘Public Data’ shall be considered as ‘Consented Data’. All users of HFR data, including verifiers, associate entities and residual users, shall raise a request to the facility to access the data. Once the Facility Manager shares his explicit consent, only then will this data be available to the participant entity.

The facility may share its consent for specific data fields it wants to display on the platform for public view. HFR grants complete control to the facility on the data/ information it wants to display.

### 3.7.4 Key Issues for Consultation

The above section lays down the standards followed by HFR to maintain and collect data in the registry.

1. Comments are invited on any additional standards that should be followed to ensure the quality and transparency of data in HFR, along with views on the presentation of audited/ verified data in HFR.

2. Clause 3.7.1 explains how the verified data will be displayed in HFR. Suggestions in the form of designs and wireframes are invited from concerned stakeholders on the display of verification logs to ensure the user-friendliness of the platform.

# Chapter 4

# Additional Issues for Consultation

4.1 While each chapter and clause in the paper includes the questions open for consultation, there are some overarching questions that require attention and seek comments from concerned stakeholders. Comments and suggestions are invited on each of these issues.

1. Since the NDHM is a recent concept in the arena of Indian healthcare ecosystem and is going to pave the way for transformation of most traditional processes in the domain, it is imperative that the nomenclature of the new registries and novel classes of participants defined above are understandable and acceptable by the different stakeholders in the ecosystem. Therefore, comments are invited on officialising the following names:

- Health Facility Registry
- Health Facility Verifier
- HFR Organisation/ Programme

2. While this paper talks about the scope of the Health Facility Registry and how it's being built to deliver on the needs of different stakeholders in the health ecosystem, it's probable that separate groups of stakeholders require a specific modulation in the registry for their business purposes. Therefore, comments are invited by different stakeholders directly or indirectly engaging with HFR on their requirements and the modularities they might want HFR to possess.

3. HFR envisions that the entire ecosystem should be able to interact with the registry through open APIs and integrating the same through the NDHM Sandbox. While the list of HFR APIs has already been laid out on the Sandbox portal here, stakeholders are invited to share their comments on any additional APIs they might require to make their integration with HFR more seamless. This is to ensure that all types and categories of players in the healthcare ecosystem are able to add value to their products and standardise their offerings as per the standards set by NDHM.

4. The concept of Health Facility Verifier has been introduced to ensure transparency and credibility of data in the Health Facility Registry. While the proposed eligibility and selection criteria to become a Health Facility Verifier has been laid out in this paper, stakeholders are invited to share their comments on the following:

- What should be the scope of responsibility of the Health Facility Verifier? Should the verifier be considered liable for the correctness and reliability of data in HFR?
- As per the current model, HFV may charge a fee for the verification from the hospital. What should be the mechanism of setting the price for the verification services and should NDHM act as one of the parties involved in the process?

5. Additionally, views are also invited on the accessibility of data in HFR by different groups of participants and stakeholders. Across the NDHM ecosystem, data sharing is based on the consent shared by the data principal, which is the health facility. More details on the data management in overall NDHM can be found in the NDHM Data Management Policy.

6. Data Management in HFR has been discussed in Clause 3.7, including the different states of data and how it would appear in the portal. Standards being adopted to ensure reliable data are also discussed in the same clause. Stakeholders and the ecosystem at large are invited to share their thoughts on the models discussed and suggest any alternative models that can be considered to implement a functional and comprehensive HFR.

If there are any other issues that the public would like to raise or comment on, they are invited and encouraged to do so.

# Chapter 5

# Annexures

Annexure 1 - Minimum HFR Dataset

Annexure 2 - Detailed HFR Dataset

**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 Health Facility Registry. Nothing contained in this document should be considered to be legally binding in any manner. The N HA, 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.