Ministry of Electronics
& Information Technology

सत्यमेव जयते
Ministry of Health & Family Welfare
Government of India

national health authority
सत्यमेव जयते

National Digital Health Mission

Strategy Overview

Making India a Digital Health Nation
Enabling Digital Healthcare for all

July 2020

—

National Health Authority

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Abbreviations

Abbreviation	Expansion
AB-PMJAY	Ayushman Bharat Pradhan Mantri Jan Arogya Yojana
AERB	Atomic Energy Regulatory Board
AI	Artificial intelligence
API	Application Programming Interface
ASHA	Accredited Social Health Activist
AYUSH	Ayurveda, Yoga & Naturopathy, Unani, Sikka, Homeopathy
BoCW	Building and other construction workers
CAPF	Central Armed Police Forces
CCIM	Central Council of Indian Medicine
CDAC	Centre for Development of Advanced Computing
CDS	Clinical decision support
CGHS	Central Government Health Scheme
CME	Continuing medical education
DGHS	Directorate General of Health Services
EHR	Electronic health record
EMR	Electronic medical record
ESIC	Employee State Insurance Corporation
FHIR-R4	Fast Healthcare Interoperability Resources Release 4
GCC	Government Cloud Computing
GIA	Grant-in-aid
GIS	Geographic information system
GoI	Government of India
HCP	Health Claims Platform
HIP	Health information provider – any entity that creates health information pertaining to a user and is ready to share it digitally with users by adopting to compliant software.
HIU	Health information user – any entity that intends to view health records of an individual, with their informed consent using compliant software.
IEC	Information, education and communication
IndEA	India Enterprise Architecture
IoT	Internet of things
IPD	In-patient department
IRDAI	Insurance Regulatory and Development Authority of India
ISO	International Organization of Standardization
IT	Information technology
JAM	Jan Dhan- AADHAR- Mobile Phone
JEA	Just-enough-administration
JIT	Just-in-time
KPI	Key performance indicator
KYC	Know Your Customer
LOINC	Logical Observation Identifiers Names and Codes
M-Card	Mobile card

MCI	Medical Council of India
MeitY	Ministry of Electronics and Information Technology
MoHFW	Ministry of Health and Family Welfare
NCD	Non-communicable diseases
NDHB	National Digital Health Blueprint
NDHM	National Digital Health Mission
NeGD	National eGovernance Division
NHA	National Health Authority
NHP	National Health Policy
NHRR	National Health Resource Repository
NHS	National Health Stack
NIC	National Informatics Centre
NICSI	National Informatics Centre Services Inc.
NIKSHAY	National Tuberculosis Elimination Programme
NIN	National identification number
NMC	National Medical Commission
NQAS	National Quality Assurance Standards
OPD	Out-patient department
OT	Operation theatre
OTP	One-time password
PACS	Picture archiving and communication system
PHR	Personal Health Record
PNDT	Pre-natal diagnostic techniques
POC	Privacy Operations Centre
PTCA	Percutaneous transluminal coronary angioplasty
RCH	Reproductive and child health
ROHINI	Registry of hospitals in network of Insurers
SDG	Sustainable Development Goals
SNOMED-CT	Systematized Nomenclature of Medicine -- Clinical Terms)
SOC	Security Operations Centre
TPAs	Third party administrator
UHC	Universal health coverage
UTs	Union Territory
VPC	Virtual Private Cloud
WCD	Women and Child Development

Chapter 1
Context of the Mission

1.1. Background

1.1.1. The National Health Policy (NHP) 2017 has 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."

1.1.2. In a follow-up of the NHP's specific goals for adopting digital technologies, 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.

1.1.3. Taking forward the NDHB, this document describes the broad context, rationale, scope, and implementation arrangements for a digital ecosystem for healthcare services across the country. Since the implementation is envisioned to be in a mission mode, the initiative is referred to as the National Digital Health Mission (NDHM).

1.2. Vision of National Digital Health Mission

1.2.1. 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.

1.3. Objectives of National Digital Health Mission

1.3.1. To strengthen the accessibility and equity of health services, including continuum of care with citizen as the owner of data, in a holistic healthcare programme approach leveraging IT & associated technologies and support the existing health systems in a 'citizen-centric' approach, the NDHM envisages the following specific objectives:

1. To establish state-of-the-art digital health systems, to manage the core digital health data, and the infrastructure required for its seamless exchange;
2. To establish registries at appropriate level to create single source of truth in respect of clinical establishments, healthcare professionals, health workers, drugs and pharmacies;
3. To enforce adoption of open standards by all national digital health stakeholders;
4. To create a system of personal health records, based on international standards, easily accessible to individuals and healthcare professionals and services providers, based on individual's informed consent;
5. To promote development of enterprise-class health application systems with a special focus on achieving the Sustainable Development Goals for health;
6. To adopt the best principles of cooperative federalism while working with the States and Union Territories for the realization of the vision;
7. To ensure that the healthcare institutions and professionals in the private sector participate actively with public health authorities in the building of the NDHM, through a combination of prescription and promotion;

8. To ensure national portability in the provision of health services;
9. To promote the use of clinical decision support (CDS) systems by health professionals and practitioners;
10. To promote a better management of the health sector leveraging health data analytics and medical research;
11. To provide for enhancing the efficiency and effectiveness of governance at all levels;
12. To support effective steps being taken for ensuring quality of healthcare; and
13. To strengthen existing health information systems, by ensuring their conformity with the defined standards and integration with the proposed NDHM.

1.4. Opportunity for the National Digital Health Mission

1.4.1. The current strong public digital infrastructure—including that related to Aadhaar, Unified Payments Interface and wide reach of the Internet and mobile phones (JAM trinity) —provides a strong platform for establishing the building blocks of NDHM. The existing ability to digitally identify people, doctors, and health facilities, facilitate electronic signatures, ensure non-repudiable contracts, make paperless payments, securely store digital records, and contact people provide opportunities to streamline healthcare information through digital management.

1.4.2. Ayushman Bharat—Pradhan Mantri Jan Arogya Yojana (AB-PMJAY) has successfully used the available public digital infrastructure to provide end-to-end services through an information technology (IT) platform from identification of beneficiaries to their admission and treatment in hospitals to their discharge and paperless payment to hospitals. The experience of AB-PMJAY can be leveraged to expand the reach of digital health to all residents and develop an open and inter-operable health management system that empowers residents, healthcare providers, the Government and researchers.

1.4.3. Emerging technologies such as artificial intelligence, the internet of things (IoT), Blockchain and cloud computing provide additional opportunities for facilitating a more holistic digital health ecosystem, that can increase the equitable access to health services, improve health outcomes and reduce costs.

1.5. Benefits and Impact

1.5.1. The implementation of NDHM is expected to significantly improve the efficiency, effectiveness, and transparency of health service delivery overall. Patients will be able to securely store and access their medical records (such as prescriptions, diagnostic reports and discharge summaries), and share them with health care providers to ensure appropriate treatment and follow-up. They will also have access to more accurate information on health facilities and service providers. Further, they will have the option to access health services remotely through tele-consultation and e-pharmacy. NDHM will empower individuals with accurate information to enable informed decision making and increase accountability of healthcare providers.

1.5.2. NDHM will provide choice to individuals to access both public and private health services, facilitate compliance with laid down guidelines and protocols, and ensure transparency in pricing of services and accountability for the health services being rendered.

1.5.3. Similarly, health care professionals across disciplines will have better access to patient's medical history (with the necessary informed consent) for prescribing more appropriate and effective health interventions. The integrated ecosystem will also enable better continuum of care. NDHM

will help digitize the claims process and enable faster reimbursement. This will enhance the overall ease of providing services amongst the health care providers.

1.5.4. At the same time, policy makers and programme managers will have better access to data, enabling more informed decision making by the Government. Better quality of macro and micro-level data will enable advanced analytics, usage of health-biomarkers and better preventive healthcare. It will also enable geography and demography-based monitoring and appropriate decision making to inform design and strengthen implementation of health programmes and policies.

1.5.5. Finally, researchers will greatly benefit from the availability of such aggregated information as they will be able to study and evaluate the effectiveness of various programmes and interventions. NDHM would facilitate a comprehensive feedback loop between researchers, policymakers, and providers.

1.6. Guiding Principles

1.6.1. The NDHM will be designed, developed, deployed, operated and maintained by the Government in accordance with the guiding principles as laid out in NDHB. The NDHM guiding principles are as follows:

1.6.2. **Business Principles (Health Domain Principles)**

1. *NDHM will be wellness-centric and wellness-driven* - Wellness centres and mobile screening teams will be strengthened through real-time access to personal health records.
2. *NDHM will educate and empower individuals to avail a wide range of health and wellness services* - Mass awareness and education will be promoted through use of appropriate platforms and a portfolio of Health Apps.
3. *NDHM systems will be designed to be inclusive* - Specialized systems will be designed to reach out to the "unconnected", digitally illiterate, remote, hilly, and tribal areas.
4. *NHDM will ensure security and privacy by design* - A National Policy on Security of Health Systems and Privacy of Personal Health Records will be developed, in accordance with the PDP Bill 2019. All the building blocks that require handling personal health records will be designed to comply with such a policy at the outset.
5. *NDHM will be designed to measure and display the performance and accountability of all health service providers* - Real-time monitoring of performance of all health institutions and professionals against agreed KPIs will be done across service levels of the health sector and published.
6. *NDHM will have a national footprint and will enable seamless portability across the country through a Health ID* – Personal Health Identifier, with supporting blocks, including adoption of Health Information Standards will play a pivotal role in national portability.
7. *The eco-system of NDHM will be built basing on the principle, "Think big, start small, scale fast"* - NDHM will adopt a combination of strategies like taking a minimalistic approach for designing each building block, prioritizing and sequencing of the development/ launch of these blocks, and designing a technology architecture that can rapidly and agilely scale horizontally and vertically.

1.6.3. **Technology Principles**

1. *NDHM will be developed by adopting India Enterprise Architecture Framework (IndEA)* - The design of the building blocks of NDHM will adopt and conform to IndEA by default. All the design and development efforts will adopt the Agile IndEA Framework notified by MeitY.

2. *All the building blocks and components of NDHM will conform to open standards, be interoperable and based on Open Source Software products and open source development* - The policy on Open Standards and Open Source Software, notified by MeitY, GoI, will be adopted in designing of the building blocks and in all procurements. Interoperability will be inherent to all the building blocks.
3. *Federated Architecture will be adopted in all aspects of NDHM* - Only the identified Core Building Blocks will be developed and maintained centrally. All other building blocks will be designed to be operated in a federated model that factors regional, state-level and institution-level platforms and systems to function independently but in an interoperable manner. As defined in NDHM, the data will be federated and stored close to the point of generation.
4. *NDHM will be an Open API-based ecosystem* - All the building Blocks will be architected adopting the Open API Policy notified by MeitY, GoI and will share data as per standards as defined in NDHB. Security and Privacy will be built into the design and development of the APIs, which should be audited for security and privacy before deployment.
5. *All major legacy systems will be assessed for conformance to NDHB principles and leveraged to the extent feasible* - Compliance of legacy systems to the Blueprint principles and Agile IndEA principles will be assessed through an appropriately designed assessment tool to evaluate the current conformance and effort required to integrate them with NDHM. Only those legacy systems that cross the bar will be allowed to operate within the eco-system. However, the useful data about healthcare providers, labs, patients available in the legacy applications will be leveraged and utilized to the extent possible, leading to savings in time and effort in collecting such information again.
6. *All the components, building blocks, registries, and artefacts of NDHM will be designed adopting a minimalistic approach* - Easy, early, and collective adoption of the Blueprint by majority will be critical to its success. Hence every component of the Blueprint will be designed to be minimalistic.
7. *All the registries and other master databases of NDHM will be built as Single Source of Truth on different aspects and backed by strong data governance* - Rigid validation processes will be applied to all mandatory 'fields', clear ownership and responsibilities will be defined for all core databases and strong, dedicated data governance structures will be established at the State and Central levels.

Chapter 2
Scope of the Mission

2.1. Introduction to the scope of NDHM

2.1.1. The National Digital Health Mission will implement the core and common digital building blocks required for healthcare and make them accessible as digital public goods to both the public and private ecosystem. The National Digital Health Blueprint identifies several of the building blocks required to be developed (See Annexure 1).

2.1.2. The building blocks will be available as a collection of cloud-based services. Each service will provide just one capability across multiple health services, accessible via simple open APIs, with built-in security by design and adequate authentication, authorization, and access protocols as per NDHB and notified from time to time by the Government. Together these will create a powerful framework to enable better healthcare delivery and management for the country. Details on the National Digital Health Blueprint are accessible at https://nha.gov.in/NDHB.

2.1.3. NDHM will need to develop a strong set of mandates and promotion to ensure adoption across both public health and private ecosystems to help realize the vision of an inter-operable health ecosystem.

2.2. Health Data

2.2.1. Health data is critical for creating holistic views of individuals, personalizing treatments, improving communication between caregivers and individuals, and delivering better health outcomes. Health data can be classified into the following categories:

1. **Personal Health Data** - Data related to an individual containing detailed information of various health conditions and treatments. It includes any data with personally identifiable information of various stakeholders, e.g. healthcare professionals.
2. **Non-Personal Health Data** - Includes aggregated health data like number of dengue cases and anonymized health data where all personally identifiable information has been removed. This will also include information about health facilities, drugs etc. which do not involve personally identifiable information.

2.2.2. Healthcare providers create health data for patients/individuals during each encounter. Most providers issue a physical copy of a health report to patients as part of the treatment. These commonly include diagnostic reports, discharge summaries, prescriptions, and clinical notes. In-patient case files such as OT notes are currently not shared unless requested by the patient.
The Mission will require healthcare providers to share a digital copy of any health reports being physically shared with the patient to enable creation of longitudinal health records.

2.2.3. India is moving fast towards adoption of software systems in healthcare. The types of software used to manage health information include:

1. **Electronic Medical Records (EMR)** - This refers to systems that are used within a hospital or a clinic to support patient diagnosis and treatment and are transaction focused. NDHM requires these systems to be updated to support standards and provide access of the data to patients.
2. **Electronic Health Records (EHR)** - EHRs contain records for a patient across multiple doctors and providers and is used within a Healthcare system (like say across a state government) to provide better care for patients

3. **Personal Health Records (PHR)** - PHRs enable patients to compile, update and keep a copy of their own records that can help them better manage their care and are person focussed.

2.2.4. Federated Architecture of Health Data

1. NDHM will implement a federated health records exchange system that will enable patient data to be held at point of care or at closest possible location to where it was created. Health records will be accessible and shareable by the patient with appropriate consent and complete control of the records will remain with the patient. An appropriate digital consent framework as per standards specified by NDHB (leveraging DigiLocker consent management framework to the extent possible) will be adopted for consent management.
2. To participate in the federated health records system, Health care providers are expected to adopt software that enables them to become Health Information Providers (HIPs), also known as Health Data Fiduciaries. This will be any entity that is creating health information pertaining to a user and is ready to share it digitally with users by adopting to software compliant with NDHM standards and policies. HIPs will keep a digital copy of both inpatient and outpatient health records they issue to patients as per policy. The current guidelines issued by MoHFW requires care providers to store medical records digitally indefinitely.
3. Till such time digital services are made mandatory, maintenance of physical records will be required. While option of digital Health ID will be there, in case a person does not want Health ID, then also treatment should be allowed.
4. HIPs will be required to ask patients for a *Health ID*, educate and create *Health IDs* for patients as required, keep a link of the *Health ID* with the medical documents they produce, and issue the medical documents only with patient's consent. To become HIP, the health care facility will be required to enrol in the NDHM health care infrastructure registry (Healthcare Facilities' Registry).
5. Health information users (HIUs) will be able to request for health records of a patient. These will be any entity that intends to view health records of an individual with consent of the individual using compliant software. EMR systems, doctors, applications providing advice to patients by looking at health records will need to implement HIU specifications. HIUs cannot get any data without patient consent.
6. Many entities who are HIPs will also be HIUs. However, the two have largely independent responsibilities with their own functions. Any entity intending to take either of the roles will need to adhere to the guidelines specified for being a HIP or HIU. HIPs are fiduciaries of health data storing the health records of individuals, wherein the HIUs are the individuals/organizations who will request access to health data and get the same if consent is given by the individual.

2.2.5. Formats and Adoption of Standards for Health Data

1. The NDHB has recommended several health data standards for adoption and use including FHIR-R4, SNOMED-CT, LOINC, ICD10/11, as required and notified by Government from time to time. The current adoption of standards is extremely poor across health care providers. The Mission will follow a path that enables gradual adoption of standards by HIPs.
2. HIPs must share with patients, a digital version of any document already being given to the patient like
    a. Diagnostic reports - microbiology, pathology, and radiology
    b. Discharge summaries -- for all inpatient treatments
    c. Clinical Notes -- for inpatient and outpatient encounters
    d. Prescriptions - medications, glasses
    e. Immunization records

3. NDHM will publish the formats to be used by HIPs for each of these documents. HIPs must ideally share the documents in standards compliant with FHIR-R4 resource format. For an initial period, the design will allow for existing PDF and image files to be shared in a FHIR-R4 resource wrapper.

   It is envisaged that modern artificial intelligence (AI) techniques that can extract relevant information from these existing health record formats will become rapidly available and help HIPs in this transition to standards. NDHM will keep a check on the reliability of AI systems by laying down guidelines and standards.
4. This adoption approach is expected to ensure patients and doctors get access to health records in the current formats they are used to seeing today and gradually migrate to a standards-based document format over time.

2.2.6. Health Data Anonymization and Aggregation

Every HIP will also produce aggregated health data, for example the number of dengue cases or number of PTCAs performed each day. This aggregated data feed will become part of the National Health Analytics architecture. "Anonymization" with respect to personal data, means the irreversible process of transforming or converting personal data to a form in which a data principal (owner/individual) cannot be identified. The NDHB recommends providing Anonymization-as-a-Service that can be used by HIPs to anonymize data as close to the source as possible. Non-personal health data both aggregated and anonymized are very important for the development of the health ecosystem. Data classification into personal/non-personal will be linked to the Personal Data Protection Bill 2019.

2.2.7. Health Data Legal Framework

1. The laws, rules and regulations pertaining to personal health data are predominantly covered under the Personal Data Protection Bill, 2019 currently in the Parliament. The overall framework of NDHM will be aligned with the framework of the draft Personal Data Protection Bill. The draft Bill has provisions for issuance of sector specific regulations that are critical to the implementation of NDHM. The federated health record exchange has been designed to be compliant with the provisions of the draft Bill. The Government has set up a committee to examine the regulations required for use of non-personal data as well. The recommendations of this committee would be integral to finalize the policies related to access to non-personal health data as part of NDHM.
2. Health records under NDHM are digitally signed and are equivalent to paper records under the IT Act and can be used in legal scenarios like medico legal cases. Certain types of use of personal health data are expected to be prohibited even if the data was provided with consent -- for example usage of data for commercial promotions. A list of such use-cases will be finalized by NDHM in consultation with MoHFW and other stakeholders.

2.2.8. Underlying Principles of Health Data Management

1. The following elements are part of the design of the federated health record ecosystem:
   a. **Individual Owned:** All records and their components will be owned and controlled by individuals —HIPs will be data fiduciaries.

      Health Lockers: Patients will have choice to keep a copy of their records in their own cloud store called Health Lockers. Patients will have the ability to store all records through their lifetime in these lockers. Several Health Lockers will exist giving patients adequate choice & security. DigiLocker initiative of NeGD, MeitY shall be the prioritized choice for Health Lockers, while the individuals will be able to consider other options too, with appropriate compliance as defined in NDHB. Digilocker will provide access to

users of their electronic health records and will also provision for an instance of Digilocker as Health Locker and storage infrastructure for this purpose, in case required by MoHFW. The Government may also provision for appropriate IT Infrastructure including storage for Health Lockers as the preferred choice.

b. **Consent Driven Sharing:** Health records will be accessible and shareable by the patient with appropriate consent, and complete control of the records will remain with the patient. The appropriate digital consent framework (leveraging DigiLocker consent management framework to the extent possible) will be adopted for consent management. The design supports delegated consent (from say a family member) and deemed consents (medical emergencies handled by a doctor or specific requirements by duly authorized law enforcement agencies).
c. **Revoke Consents:** HIUs are expected to implement the rules specified in consent including time limitations. Individuals will have the right to review and revoke any consent that has been issued. HIUs are required to implement the revocation and provide a confirmation back to the user.
d. **Partial Sharing:** Individuals will have right to share only a part of their record with doctors as per their will. However, in such a case, doctors will be informed that they are being provided with partial information and can advise the patient that treatment ability may be limited due to lack of full information.
e. **Voluntary**: Sign-up for PHRs will be voluntary and even after sign-up, a patient will have the right to opt-out. Links to their documents across HIPs would be deleted.
f. **Records from Govt Schemes:** Government schemes—such as PMJAY, NIKSHAY—will act as HIPs and issue any medical records from the scheme into patient PHRs.
g. **Update of an Issued Health Record:** If a health provider decides to update an already issued health record, the original record and an audit trail of the change will be available to the patient.
h. **User Generated Data:** Users can add reading from IoT and other devices like wearables to their PHR. The data will be stored in the Health Locker which can act as a HIP for the user. All user added data will be clearly and separately labelled to ensure care providers can differentiate the data generated by other providers vis a vis those added by the user.
i. **Sharing Health Data:** Patients will be allowed to share health data to any HIU with consent.
j. **Grievance:** Users will be provided options to complain about misuse and have any issues resolved.
k. **Forget My Data:** Users can opt out from linking their records across HIPs but cannot ask HIPs to delete their data. HIPs are required to store the data for users for the period as required by law. Users can only delete user uploaded data or the copy of the records they have in their Health Locker. Anonymized data of individuals will be kept and continue to be available for public health purposes, e.g. epidemiological or disease burden research, etc.
l. **Federated:** The design ensures patient data will be held at point of care or closest possible location where it was created, with no centralized repository. Even EHR data repositories will be collection of links or URIs but not collection of health records. This improves privacy and security. The organizations intending to be HIPs will be mandated to follow the minimum standards as defined by NDHM including security, privacy, and storage of data. The storage and security of HIP technology systems will be a part of the overall certification to be done by STQC, MeitY as explained further in the document.

m. **Choice of Health Record Viewers:** DigiLocker initiative of NeGD, MeitY shall be one of the preferred choice of the Government as the Health Record Viewer, in addition to the Health App to be built as a part of building blocks by the Government. In addition, other front-end Apps to view the health records will be widely available and the choice of the App will be with the individual; these Apps will manage the consent mechanisms, sharing and display of information and will ensure security in collaboration with the HIPs and other intermediaries. It will be ensured that there is no conflict of interest, and that there is strong protection of PHR against unauthorized use with technical as well as regulatory framework. The original data will remain close to the source, with the individual having the right to retain offline soft copies, if needed. The individual will have the ownership and control to link his/her health records. Front-end apps will not be allowed to download and store the PHR of the patients and create their own repositories. These will also not be allowed to use the patient data for any advertising, commercial or profiling purposes. The Government may also provision for appropriate IT Infrastructure including storage for Health Lockers as the preferred choice.

2.2.9. **Health Data: Personal Health Records**

1. NDHM will promote a federated Personal Health Record (PHR) architecture. Government health systems and large organized corporates are expected to be early adopters, it is likely to take some time to cover smaller hospitals, clinics, and diagnostic centres in the network. To ensure the same, NDHM will follow holistic approach and will take into account all types of health systems to the extent possible. The Personal Health Record (PHR) will be a longitudinal record for each individual on the system, comprising all health data, lab reports, treatment details, discharge summaries etc. related to one episode or a set of episodes, across one or multiple facilities.
2. HIPs, i.e. the facilities who have delivered the services maintain a portion of each individual record. All health data will be made accessible to the individual via the Personal Health Record and the individual will hold complete right to allow sharing or access to the same via the finalized consent management framework.
3. The individual will be able to view the content of their health records via a web interface and a mobile application. Access will be provided only after the user authenticates using any of the authentication methods supported by the underlying Health ID. Sharing of health records must be enabled only with consent. Applications must follow the consent (time, access etc.) as given by the individual and related rules & regulations.
4. The Government will provide only platforms, gateways, or systems to get various players connected with each other. Every individual/institution will have the option of storing the documents on the platform it wishes to. It will never be mandatory that the records be maintained on Government servers only. However, the Government will ensure that individuals are able to get the services at no/low cost, if intended, through Government platforms as well. Even in such Government systems, the Government will store these in capacity as fiduciary. Conflict of interest and protection of PHR against unauthorised use or access by any entity to be monitored and regulated through guidelines and enforcement mechanism to be issued by NDHM.
5. The option will be given to all to use services of Government or private sector for storing their health data as per their choice, with individual being the primary owner of her/his own health data. The Personal Health Records will be available to the individual at all times.

2.3. Health ID

2.3.1. It is important to standardize the process of identification of an individual across healthcare providers. This is the only way to ensure that the created medical records are issued to the correct individual or accessed by HIU through appropriate consent.

2.3.2. 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.

2.3.3. Unique Health ID will be promoted. However, generation of Unique Health ID based on Aadhaar authentication cannot be mandated for everyone. The concept of continuity of records, recoverability of ID and retrievability in case of unconscious patient will be included in the design.

2.3.4. For those individuals intending to seek benefit of Government subsidy schemes (as notified u/s 7 of Aadhaar Act) and those who are willing to provide Aadhaar, Unique Health ID will be generated based on Aadhaar, following the applicable statutory provisions and regulations.

2.3.5. For those individuals not intending to seek any benefit of Government subsidy schemes, the Health ID may be generated after taking suitable precautions to verify the identity using email, mobile number, or any reliable government-issued proof of identity. For such cases, a distinguishing factor/flag at the backend, mapped to the health ID will be available.

2.3.6. Facility to link these IDs of one person will be available. Individuals shall be encouraged to move towards linking these or towards single health ID and to obtain unique health ID based on Aadhaar.

2.3.7. The policies around issue of Health ID will be designed to ensure

1. No denial of health service to anyone in any scenario
2. No scope for medical errors arising out of wrong identification of the patient

2.3.8. Health ID shall be generated mainly in health facilities or during the first instance of patient with health facilities. Health ID can also be issued in organizations that can work with population at large, e.g. CSCs, schemes like PMJAY, CGHS etc. and self-registration with appropriate authentication and authorization means with due checks and balances.

2.3.9. There shall be a proper mechanism to create Health ID in the system before implementation. Aadhaar shall be linked wherever Government benefits are being given to the concerned individual, making it unique. However, for others not taking any benefit from the Government, alternative options may be made available.

2.3.10. **Health ID Creation**

1. Any public hospital, Community Health Centre or Health and Wellness Centre across India or any healthcare provider that is included in the health infrastructure registry will be able to support an individual in obtaining a Health ID. Patients can also obtain a Health ID by self-registration from a mobile or a web application. To create the ID, the individual will need to provide their basic individual, demographic and contact information to the consent manager at the concerned health facility.

2. Health IDs will need to be digitally authenticatable to enable patients to provide their informed consent. One option is linking the Health ID with Aadhaar, which will expand the ways in which authentication for informed consent can be performed - including biometric, face or OTP-based authorization. The Health ID will be used for the purposes of uniquely identifying persons, authenticating them, and threading their health records (only with the informed consent of the patient) across multiple systems and stakeholders.
3. The Government will notify the use of Aadhaar for Healthcare under Section 4 of the Aadhaar Act. Health schemes that mandate the use of Aadhaar will need to notify their schemes under Section 7 of the Act.

2.3.11. **Health ID in Government Programmes**

1. Health ID will be offered as a service with a set of APIs. All government health programmes, notified under applicable statutory provisions, are required to integrate with the service and issue Health IDs as part of their programs. This will ensure that health information from visit to public health facilities and those being captured across various health programs like RCH, NIKSHAY, NCD, PMJAY will be included in the patients' longitudinal health record. Obtaining a Health ID will not mean the inclusion of all benefits under the schemes. Eligibility for a specific scheme like PM-JAY will be verified and linked to the respective Health ID. All Government health insurance schemes as well are expected to adopt and link the Health ID for benefits linkage.

2.3.12. **Health ID Linkage with Family members**

1. The possibility of linking every Health ID with those of Health ID of holder's family members, including children, spouse, siblings, and parents will be explored within the legal framework. The linkage would result in both IDs updating their relationship with each other. Linkages are important in cases where delegated consent, organ donation or family medical history are required. The guidance on legal and regulatory framework will be taken from MoHFW and MeitY. The Health ID service will allow users to maintain, customize, delete, and update the information and relationship status of those listed as their family members.

2.4. Health Registries

2.4.1. Health registries are the key building blocks of NDHM. They are the master data of all the entities in the ecosystem, including doctors, hospitals, clinics, laboratories, pharmacies, and insurance companies. These registries provide the basic information about these entities, ensure the reliability of the health information generated as a System of Record (SoR) and increase healthcare providers' accountability.

2.4.2. **Domain and Technology Owners for Health Registries**

1. All Health registries will have public data—accessible via open APIs, and consented data—detailed data available only on the informed consent of the underlying entity. Each Master Registry will have a domain owner who will be responsible for defining the rules and policies for how an entry gets added or modified in the Master Registry. The domain owner will also take responsibility for ensuring that the key attributes of Registries (e.g., unique values, completeness) are safeguarded.
2. Possible domain owners for key Registries include:
    a. Doctors Registry: National Medical Council/MCI/CCIM
    b. Insurers Registry: IRDAI
    c. Pharmacy Registry: Pharmacy Council of India
    d. Dental Doctors – Dental Council of India,

e. AYUSH Doctors – Relevant bodies within Ministry of AYUSH

3. The domain owners will have the primary responsibility of defining rules, policies, and data related rights. The data will reside in a federated model, including at States and UTs, as defined in NDHB.
4. As the technology owner of Registries, NDHM will be responsible for developing the technology, managing the business requirements, and working with various stakeholders. It will also ensure that design across registries, enable open APIs with security, share learnings and serve as a single interaction point for users of the Registries.

2.4.3. **Underlying Principles for Health Registries**

1. Registries must be carefully designed with strong processes to ensure
    a. **Unique values**: no duplicates
    b. **Complete values**: no missing values (so ANY transaction can be described)
    c. **Self-Maintainability**: entities can enrol and update information themselves
    d. **Non-Repudiability**: Source of every attribute is visible; all changes are digitally signed
    e. **Layered access**: Clear demarcation of public and private data; consent-based access for private data
    f. **Extensible schema**: Only minimal data in registries; allow ecosystem stakeholders allowed to provide extended data
    g. **Open APIs**: Public data in registries will be accessible via open APIs, with security. These may also be published on the National Data Highway (NDH) to ensure easy access by other digital platforms being implemented by various government departments;
    h. **Aligned Benefits**: Ensure adoption for use cases that keep the data up-to-date;

2.4.4. **Health Workforce Registry**

1. The health workforce registry will cover doctors, nurses, paramedical staff, ASHAs and many other health workforce cadre. NDHM will develop these registries in a phased manner starting with the DigiDoctor platform, including AYUSH doctors.
2. To be successful, the Registries have to be useful to the entities listed on the Registry (e.g., doctors or hospitals) as well as be useful to other members of the ecosystem (e.g., patients or insurers or policymakers). Utility to members of that Registry (or auto-utility) is critical as the Registries need to be self-maintained and updated - something that is very hard to do for a third party.

2.4.5. **Healthcare Facility Registry**

1. The healthcare facility registry will consist of one record and a unique identifier for each healthcare facility in the country – hospitals, clinics, diagnostic centres, pharmacies etc.
2. Healthcare providers will experience ease of doing business as a verified entry in the registry will enable them to apply online for several licenses like pollution clearance, AERB, Drug/Pharmacy licenses, PNDT, medical waste management, etc. The registry will also enable paperless empanelment to government schemes and private insurances as a standardized e-facility record can be shared from the registry with consent. The registry will:
    a. enable hospitals and diagnostic clinics participate in the digital health ecosystem;
    b. allow healthcare facilities to be able to e-sign agreements, claim forms and payments related documents;
    c. maintain references to ROHINI, NIN and NHRR codes to ensure data linkage;
    d. 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. The registry will store the facility information;

e. make available detailed facility information in standard machine-readable format; and
f. offer a set of APIs for applications to query, add, update, and verify the data present for each provider.

2.5. Health Claims

2.5.1. As India moves towards UHC, a larger part of the population health costs will be covered by payers. Efficient processing of health claims will thus become a key requirement in the health ecosystem. NDHM will adopt the recommendation of the IRDAI NHA Joint Working Group on creating a common IT infrastructure for the sector[1]. As part of the process, NDHM will

1. Define and adopt a standard e-Claim form that can be used for any health insurance claim - Public (PMJAY, CGHS, etc) or Private (Retail / Group). The format of the e-Claim would be derived from the FHIR-R4 standards used globally.
2. Create a Health Claims Platform (HCP) as a public good where health providers (e.g. hospitals, labs, or primary care centres) submit their e-Claims and Payers (Insurers and TPAs) receive e-claims via standard APIs. The HCP will provide a set of digital services that will ensure the industry can move to common standards for claim processing.
3. Simplify the process of health provider empanelment and make it paperless by adopting a standard e-facility form. The e-facility form will contain details of specialities, infrastructure, and manpower available at a health facility. The Healthcare Facility Registry will store and share e-facility forms with payers / TPAs on consent.
4. Ensure that the Health Claims Platform adheres to the set of design principles laid out in NDHM including ensuring non-repudiability of claims sources and adjudication decisions, verifiability and explain-ability of decisions, strong data privacy and encryption, consent-based data sharing, reliance on open APIs with security by design and open standards, the use of extensible/flexible machine readable schemas, and a financial model to encourage competition and innovation by software providers.

2.6. Health Data Analytics

2.6.1. Every Health Information Provider is expected to generate aggregated data on the health information that is being managed by them in the federated architecture.

2.6.2. Health Data Analytics platform will be developed that will subscribe to the aggregated data from all HIPs, subject to compliance with the applicable policies and statutory provisions relating to privacy and data protection. Data feeds are expected to be updated every day for any incremental data from the previous data. Federated data lakes can be setup to manage this aggregated data feed with States subscribing to LHDRs from within the State and the Centre subscribing to all LHDRs in the country.

2.6.3. Advanced analytics tools including GIS visualizations capabilities will be available to generate a wide variety of reports that would be useful to the policy makers, researchers, and public in general. The tools would be made available to data analyst teams working in both Centre and States. The data from the Analytics platform will also be made available to any interested stakeholder under the NDHM Data Sharing Policy, following all relevant laws, rules, and regulations to be evolved by MeitY and MoHFW. This will be consistent with NDSAP, PDP and Non-PDP frameworks. Health Data Analytics will primarily use anonymized data.

2.7. Open Telemedicine and e-Pharmacy Network

2.7.1. NDHM will expand access to care services via a model enabling public and private sector Apps. Unlike aggregators, this will enable a more inclusive framework of utilization for digital healthcare platforms. The core principle will be that a centralized, Government created, owned, operated and managed engine is created to standardize and institutionalize the core back-end for digital healthcare services like telemedicine and e-Pharmacy, and open the front-end consumer apps – which will decouple core engine and front end app-side innovations. This will have the following benefits:

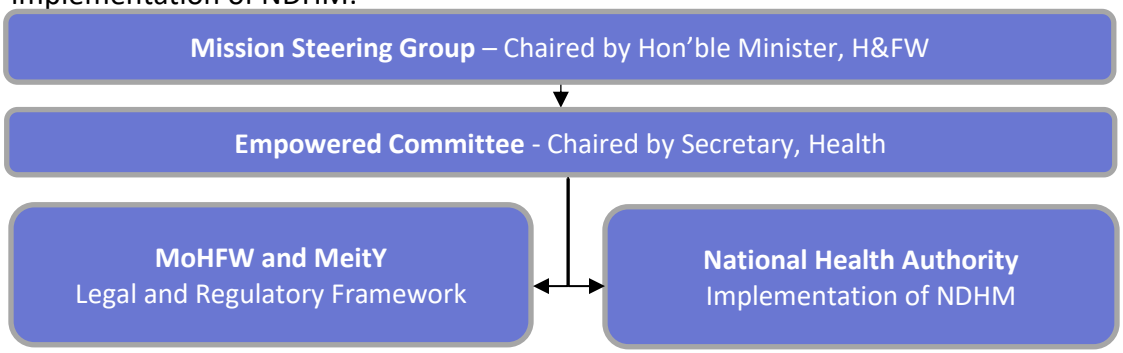
1. Core engine ownership and control with the Government for ensuring accountability, but at the same time increased consumer choice through the availability of multiple consumer apps
2. Open availability to participate in the digital healthcare ecosystem, with choice of technological platforms to all types of service providers (individual doctors, small-sized pharmacies etc.), irrespective of their size and capacity
3. Fully interoperable allowing consumers to pay any healthcare service provider using any app
4. Increased innovation - many apps, many languages, many devices, self/assisted payment options
5. Many market players due to open digital playground

This will also help implement the ideology of value-added services as defined in NDHB.

Chapter 3
Implementation of the Mission

3.1. Governance Structure and Framework

3.1.1. NDHM is a collaborative initiative between many ministries/departments. Given the inter-linkages and comprehensiveness of the Mission, the following governance structure is proposed for implementation of NDHM:



Governance Structure and Framework

3.1.2. As per the National Digital Health Blueprint, the mission will keep two separate arms – one for regulation and other for implementation and operational management. These will work under a defined governance framework, with roles and responsibilities at various levels of NDHM as suggested below:

3.1.3. Mission Steering Group

1. The Mission Steering Group will be set up under the chairpersonship of Hon'ble Minister, Health & Family Welfare – and will oversee and guide the Mission. It will have the following members:
    a. Ministers (MeitY, WCD, Social Justice & Empowerment, AYUSH)
    b. Principal Scientific Advisor
    c. Member Health (NITI Aayog)
    d. Secretaries (H&FW, MeitY, Expenditure)
    e. CEO (NHA)
    f. Additional Secretary (Health)
    g. Additional CEO/Mission Director NDHM
    h. Other members (as needed, with permission of Chair)

3.1.4. Empowered Committee

1. The Empowered Committee will be set up under the chairpersonship of Secretary, Health and Family Welfare. The Committee will take the necessary policy-level decisions, help the Mission for coordination with different stakeholders and engagement with different Ministries & Departments to ensure their participation in the NDHM. It will also supervise the roll-out of the Mission to all parts of the country and population of various directories. It will have the following members:
    a. CEO (NITI Aayog)
    b. Secretaries (WCD, MeitY, Social Justice & Empowerment, AYUSH, Expenditure, DHR)
    c. CEO, NHA
    d. DGHS
    e. DG NIC

f. Joint Secretary (eHealth)
g. Additional CEO/Mission Director NDHM
h. Other members (as needed, with permission of Chair)

3.1.5. Ministry of Health and Family Welfare

1. The MoHFW will provide overall supervision and guidance for the implementation of NDHM to National Health Authority. In addition, the Ministry will also work towards the legal and regulatory framework for NDHM and help NHA coordinate with States/UTs and the private sector to ensure their participation in NDHM. The Ministry will also issue necessary directions for adoption of NDHM by all health-related initiatives across the country.

3.1.6. Ministry of Electronics and Information Technology

1. MeitY will work with MoHFW for legal and regulatory framework for NDHM wherever necessary and related to MeitY. In addition, MeitY will play a key role for providing guidance on proper technological framework, leveraging digital services in proper fashion and emerging technologies across the globe.

3.1.7. National Health Authority

1. NHA will lead the implementation of NDHM and coordinate with different ministries/departments of the Government of India, State Governments, and private sector/civil society organizations. An officer of the rank of Additional Secretary / Joint Secretary will be deployed full-time as Mission Director of NDHM for overseeing the operations and implementation.
2. NHA will have the following key responsibilities:
    a. Administrative and technical leadership to the National Digital Health Mission
    b. Propose policy support as required to the Mission Steering Group, Empowered Committee and MoHFW
    c. Development of models for self-financing of National Digital Health Mission
    d. Implementation of policies and decisions approved by the Mission Steering Group and Empowered Committee
    e. Coordination with MoHFW and the States/UTs
    f. Engagement with all stakeholders including private sector and civil society organizations, and develop strategic partnerships to achieve the objectives of NDHM
    g. Resolution of technical and operational issues
    h. Recruitment of resources from Government and private sector at competitive market rates
    i. Management of day-to-day operations of NDHM
    j. Capacity building of various stakeholders for health informatics

Details of support needed from other ministries/organizations is placed as Annexure 2.

3.1.8. Roll-out of NDHM

1. Emphasis will be on the following two core objectives in a time-bound manner:
    a. Utilization of the platforms by all stakeholders and users, e.g. Health IDs being generated for all willing individuals, new records being pushed to PHR mapped to Health ID, registered doctors e-signing on web/mobile and generating e-prescriptions, e-discharge summaries, other medical documents – and getting the same pushed to the PHR of the individuals.
        i. This will include preparation and implementation of change management strategy to ensure doctors e-sign and generate e-prescriptions; facilities can

provide e-discharge summaries and data is entered in Electronic health records. Doctors and data entry operators will be trained to enable easy adoption of digital services.

ii. On-boarding of all willing healthcare service providers in the States/UTs and their capacity building & empowerment for maximum usage of the NDHM components.

2. MoHFW will help direct and monitor the States/UTs to fully comply and get onboarded, with the same to be done on a mission-mode.
3. NDHM will have a dedicated team to work on the on-boarding of States, and each State will establish a Mission team for rolling out and management of NDHM at State level.
4. Senior-level consultation will be done with the States, with a request to State Governments for a dedicated team set-up for integration, on-boarding and roll-out of NDHM in the concerned State.
5. States will play a leadership role in the implementation of NDHM in their States and NDHM will play a facilitatory role.
6. On basis of the initial consultation, State-specific approach for roll-out will be prepared, keeping in mind the context, needs, opportunities and constraints highlighted by the State. This will include implementation strategy and integration/roll-out timeline in the State.
7. The State(s) will be free to choose the set of healthcare institutions and schemes that they intend to integrate in phased manner. However, the overall period for complete on-boarding and 100% roll-out will be pre-defined.
8. Each State's performance pertaining to on-boarding and usage will be monitored at the level of Mission Steering Group.
9. The progress in implementing the Mission in a State will be included in the State Health Index by NITI Aayog.
10. NDHM will also work extensively and help on State Mission Teams, for specialists required for smooth implementation, team building, capacity building and enabling quicker, more efficient, and effective roll-out of the Mission.
11. The Mission will also promote integration of all related State schemes (in addition to the Centrally Sponsored Schemes).
12. Awards, accolades, and recognition systems will be set up at the national level for best-performing stakeholders (State, District, District Collector, Healthcare Service Providers, Doctors, Healthcare Professionals, Sarpanch, Village Level Entrepreneur, ASHA etc.)
13. Dedicated teams will be put in place for private sector on-boarding

3.2. Agile Implementation Methodology

3.2.1. The NDHM implementation will be done on principles of the Agile India Enterprise Architecture (Agile IndEA) Framework. The following 7 core principles will be followed during implementation:

1. Identify, Define and Assess Value
2. Develop Just-Enough-Architecture (JEA), Just-In-Time (JIT)
3. Adopt MINIMALIST approach in ALL aspects and at ALL stages
4. Design a Federated Architectural Model
5. Axiomize API-based access and Integration
6. Evaluate and enhance individual experience continuously
7. Follow Agile procurement methods

3.3. Security and Privacy

3.3.1. The security architecture of NDHB will be based on the principle of "Zero Trust Architecture". Security is the protection of systems, information (data), resources and services from accidental

and deliberate threats to confidentiality, integrity, and availability. The Security Architecture describes both measures that prevent or deter attackers from accessing a facility, resource, or information stored on physical media and guidance on how to design structures to resist various hostile acts.

3.3.2. To ensure an appropriate level of support of organizational mission and the proper implementation of current and future information security requirements, NDHM will establish a formal information security governance structure, and ensure that information security strategies are aligned with and support NDHM objectives. NDHM will formulate an Information Security Policy which addresses all related aspects.

3.3.3. In addition, for complete security and privacy orchestration, NDHM will bring in force the following policies, taking forward the guiding principles in NDHB:

1. Health IDs (Health ID) Policy
2. Data Sharing Policy
3. Security Policy
4. Privacy Policy
5. Strategic Control Policy

3.4. Legal and Regulatory Requirement

3.4.1. The NDHM comprises 35 building blocks in totality. The IT systems envisaged will be designed and the existing IT systems enhanced suitably to meet the requirements specified in the Personal Data Protection Bill and Non-personal Data Framework, as well as the IT Act 2000 and the Aadhaar Act 2016, the rules and regulations notified thereunder and other relevant acts, rules and regulations.

3.4.2. Health ID

1. The process of generation of Health ID involves voluntary usage of AADHAAR. This will require a notification under Section 4 of AADHAAR Act. In addition, notification under Section 7 of AADHAAR Act will also be needed with respect to all Government financed health benefit schemes.

3.4.3. Consent Manager

1. NDHM will ensure that informed consent of the individual is taken for collecting, storing, using, and sharing of health data. Towards these, the standards shown in Table below will be used for designing the systems and workflows required for consent management:

Purpose	Recommended Standard
Consent Management	ISO/TS 17975:2015 Health Informatics - Principles and data requirements for consent in the collection, Use or Disclosure of personal health information
Consent Framework	Electronic Consent Framework (Technology Specifications v1.1) with its subsequent revision(s) published by MeitY.

2. The above standard will be implemented in a way consistent with the applicable laws such as Information Technology Act 2000 (and its amendments), various directions, and rules of National Medical Commission and its State counterparts regarding informed patient consent and protecting patient privacy. NDHM will institutionalize an Informed Consent Policy to standardize the processes related to consent management across the digital healthcare ecosystem.

3.5. Stakeholders and Stakeholder Engagement

3.5.1. NDHM will actively garner inputs from all stakeholders during conceptualization, development and roll-out. NDHM proposes a complex system that can be realized through high quality expertise flowing into the architecture, design, and development phases, not merely within NDHM organization but across all the stakeholders in a proactive and coordinated way.

3.6. Health Infrastructure

3.6.1. Privacy by design requires an Infrastructure layer to be established for management of the key data services in a compliant manner. The Government Community Cloud or Virtual Private Cloud infrastructure, as defined by MeitY, will be adopted to host data building blocks in Level 1 (National) and Level 2 (State). A hybrid cloud environment will be used for other levels and layers.

3.6.2. For the initial implementation, the compute, storage, memory, infrastructure, and networks available with NHA on Government Community Cloud, being currently leveraged for PM-JAY, will be expanded for the implementation of NDHM. However, a separate domain, VLAN and cluster will be created for entire cloud infrastructure to be used for NDHM. Subsequently, procurement of cloud services will be done, which is explained in detail in the procurement section.

3.6.3. Government servers/cloud shall be preferred for storage and hosting of applications. If not available, the current Government Community Cloud may be leveraged by NHA. It shall be ensured, that there are no proprietary systems/tools being used by Government Community Cloud that may restrain migration to Government servers, if planned later. There shall be provision of conflict of interest and protection of PHR against unauthorised use if it is with a non-Government entity.

3.6.4. **Secure Health Network**

NDHM will be built to work on public networks by default. Wherever access to sensitive or aggregated data is involved, secure connectivity will be used. For specific applications like Tele-medicine, Tele-radiology etc. that require strong data links to systems like PACS, low latency, high bandwidth network systems will be specially designed.

3.6.5. **Health-Cloud (H-Cloud)**

The Health-Cloud will be built on the MeitY initiative of Government Community Cloud (GCC) or Virtual Private Cloud (VPC) with stronger security and privacy policies and infrastructure. Key data hub management services of the Mission will be deployed on the H-Cloud.

3.6.6. **Security and Privacy Operations Centre (SOC)**

All events on the Health-Cloud and the Health Network will be under 24x7 security surveillance ensuring every data byte is highly secure. This will be achieved through a Security Operations Centre (SOC). NDHM will establish a Privacy Operations Centre (POC) to help drive compliance on the privacy requirements, adherence to which is a must in the health sector. The POC will monitor all access to private data, review informed consent artefacts, audit services for privacy compliance, evangelize the privacy principles on which the building blocks of the Mission will be built and bring trust and strategic control in the usage of health data in the ecosystem.

3.7. Resources and Support

3.7.1. To implement at the scale to which NDHM is envisaged to grow, having a dedicated team working to achieve its vision and objectives is mission-critical. CEO, NHA will undertake the overall strategic management and implementation related-decisions.

3.8. Risks

3.8.1. NDHM will follow the principles of ISO 31000 standard for risk management. The ISO 31000 standard provides a basis for managing risk within an organization. This standard comprises of a set of principles, framework and process that may be followed to ensure appropriate risk management within the organization.

3.9. Expected Outcomes

3.9.1. The various artefacts and deliverables of NDHM are designed and developed in such a manner as to enable progress towards the following outcomes:

1. All individuals will be able to conveniently access their personal health records;
2. Leveraging longitudinal health record data, more people-centred care, reducing the occurrence of repeated diagnostic tests unless warranted;
3. Individuals will be able to aggregate their health data in a single application (PHR),although multiple agencies/ departments/ services providers are involved where the data is generated;
4. NDHM will assure the continuum of care for individuals, across primary, secondary, and tertiary levels and across public and private service providers;
5. A framework for a Unified Communication Centre will be prepared to facilitate services and outreach;
6. NDHM will support national portability for healthcare services;
7. Privacy of personal and health data, and informed consent-based access of PHRs will be an inviolable norm, with which all systems and stakeholders will comply;
8. NDHM will be aligned to the SDGs related to health;
9. NDHM will enable evidence-based interventions in public health; and
10. Above all, the analytical capabilities of NDHM will support data-driven decision-making and policy analysis.

3.10. Conclusion

3.10.1. With increased ease of use, acceptance by the people and adaptation by service providers, digital health interventions can accelerate progress towards UHC and improve population health outcomes. By establishing a comprehensive, nationwide integrated digital health ecosystem, NDHM will contribute significantly to achieving the goals of National Health Policy 2017 and the SDGs related to health.

3.10.2. NDHM will mark a new beginning for the Indian digital healthcare ecosystem, enabling more effective delivery of healthcare services and moving towards health to all.

Annexure 1

National Digital Health Mission: Organogram