

**On Line Tender Notice No.195 of 2020-21**

Administration of  
U.T. of Dadra & Nagar Haveli, Daman & Diu  
Office of the Directorate,  
Medical & Public Health Department,  
"Tel.No.0260-2642940, 2640615"  
email ID : [svbch.sil@gmail.com](mailto:svbch.sil@gmail.com)

No. DMHS/IT/eAarogya/Integration NDHM/2020-21/506/10590

Silvassa.

Date: 17/11/2020

**e-Tender Notice (Online)**

The Director of Medical & Health Services, Dadra & Nagar Haveli, Silvassa on behalf of President of India, invites on line tender on <https://dnhtenders.gov.in/nicgep/app> from the Agencies for Integration of e-Aarogya with National Digital Health Mission Eco-System under Medical & Public Health Department, DNH/DD.

Sr. No.	Particulars	Estimated Cost	(E.M.D.) Earnest Money Deposit	Tender Fees (Non-Refundable)	e-Tender ID No.
1	Integration of e-Aarogya with National Digital Health Mission Eco-System under DMHS, for DNH/DD	₹.7.80 Lacs	₹.19,500/-	₹.1000/-	2020_UTDNH_4941_1

Bid document downloading Start Date : 19.11.2020.  
Bid document downloading End Date : 09.12.2020, 12:00 Hrs.  
Last Date & Time for receipt of Bid : 09.12.2020, 14.00 Hrs.  
Preliminary Stage Bid Opening Date : 09.12.2020, 15.00 Hrs.  
Technical Stage Bid Opening Date : 09.12.2020, 15.30 Hrs.

Bidders have to submit Technical Bid and Price Bid in Electronic format only on <https://dnhtenders.gov.in/nicgep/app> website till the last date and time for submission. Technical Bid and Price Bid in Physical format shall not be accepted in any case.

1. The Tender Fees will be accepted only in form of Demand Draft/Bankers Cheque of any Nationalized or Scheduled Bank of India payable in Silvassa.
2. The EMD will be accepted in form of FDR /Demand Draft or Bank Guarantee from any Commercial Banks in an acceptable form payable at Silvassa in favor of undersigned.

The tender inviting authority reserves the right to accept or reject any or all the tender to be received without assigning any reasons thereof. In case bidder needs any clarification on the process of bidding for participating in online tender for further details, correspondence can be made on E-mail: [cppp-nic\[at\]nic\[dot\]in](mailto:cppp-nic[at]nic[dot]in), Mobile No: +91-7878007972 and +91-7878007973, Tel No. 1800 3070 2232 Website: [www.dnhtenders.gov.in](http://www.dnhtenders.gov.in).

*Sd/-*

**Director**

Medical & Health Services

U.T. of DNH/DD

“Tel.No.0260-2642940, 2640615”

email ID : [svbch.sil@gmail.com](mailto:svbch.sil@gmail.com)

**Copy to :-**

- 1) CPO, Dadra & Nagar Haveli, Silvassa for wide publicity in Newspaper.
- 2) I.T. Department, D&NH, Silvassa with a request to publish in Website.
- 3) Accounts Section, DMHS, Silvassa for information.
- 4) P&T Department, DMHS, Silvassa for information.



The Tenders shall be submitted in two-bid system, wherein the Technical bid and Commercial Bid is to be filled online on <https://dnhtenders.gov.in/nicgep/app> and the EMD and Tender Fee has to be submitted in Tender Box along with a covering letter. The envelope should be super scribing as “e-Tender - Sealed Cover of Bid for Integration of e-Aarogya with National Digital Health Mission Eco-System under Medical & Public Health Department, DNH/DD”. The EMD and Tender Fees should be enclosed with BID only.

**Tender Fees (Non Refundable) ₹.1,000/- :**

- a. The Tender Fees should not be forwarded by cash.
- b. The Tender Fees (Non Refundable) will be accepted only in form of Demand Draft/ Bankers Cheque in favor of **The Director of Medical and Health Services, Silvassa** from any Nationalized or Scheduled Bank of India payable in Silvassa.
- c. All tenders must be accompanied by Tender fees as specified in schedule otherwise tender will be rejected.

**Earnest Money Deposit ₹.19,500/- :**

- a. All tenders must be accompanied by EMD as specified in schedule otherwise tender will be rejected.
- b. The manufacturing units who are placed in Silvassa are exempted for Earnest Money Deposit. For getting exemption, tenderers have to furnish valid and certified documents along with the tender, otherwise tender will be rejected.
- c. Any firm desires to consider exemption from payment of Earnest Money Deposit, valid and certified copies of its Registration with D.G.S.&D. should be attached to their tenders.
- d. EMD can be paid in either of the form of following:
  - i. Demand Draft
  - ii. Fixed Deposit Receipts
  - iii. Bank Guarantee

In favor of **The Director of Medical and Health Services, Silvassa** from any Nationalized or Scheduled Bank authorized by RBI to undertake Government Business.

- e. EMD should be valid upto **12 (Twelve Months)** from the date of its issuance.
- f. EMD in any other forms will not be accepted.
- g. EMD/Security Deposit shall be liable to be forfeited in following circumstances:



- i. Tender is rejected due to failure of supply the requisite documents in proper format or giving any misleading statement or submission of false affidavit or fabricated documents.
  - ii. In case, the contractor does not execute the supply order placed with him within stipulated time, the EMD of the contractor will be forfeited to the Government and the contract for the supply shall terminated with no further liabilities on either party to the contract.
  - iii. Tenderer fails to replace the Services declared to be not of standard quality or not conforming to acceptable standards or found to be decayed/spoilt.
- h. The amount of Earnest Money paid by the tenderer(s) whose tenders are not accepted will be refunded to them by cheque or Demand Draft (as may be convenient to the Tender Inviting Officer if the amount is above `200/-) drawn on any Nationalized or Scheduled Bank payable at Silvassa. Where this mode of payment is not possible the amount will be refunded at the cost of the tenderer.
  - i. Only on satisfactory completion of the supply order for and on payment of all bills of the contractor, as to be admitted for payment, the amount of Security Deposit/Earnest Money will be refunded after expiry of guarantee/warranty period, if any, or any such date/period as may be mutually agreed upon.
  - j. In case of failure to supply the store, materials etc. ordered for, as per conditions and within the stipulated time, the name articles will be obtained from the tenderer who offered next higher rates or from any other sources, as may be decided by the tender inviting Officer and the loss to the Government on account of such purchases/services shall be recovered from the former contractor Security Deposit/Earnest Money or bills payable. The contractor shall have no right to dispute with such procedure.
  - k. The Earnest Money(s) paid by the tender(s) earlier against any tender(s) or supply order(s) is not adjustable with Earnest Money required by these conditions.

**Security Deposit: (SD)**

- a. The successful tenderer will have to pay within 10 days from the date of demand, an amount equal to 10% of the total value of articles, which may be ordered, as the amount of security deposit.
- b. Non receipt of Security Deposit within stipulated time will result in automatic cancellation of the order for supply without any intimation.
- c. However in case if any articles are received for which the Security Deposit may not have been deposited, the full Security Deposit as may be due from the contractor will be recovered from the bill(s) for such articles.
- d. The Security Deposit(s) paid by the tender(s) earlier against any tender(s) or supply order(s) is not adjustable with Security Deposit required by these conditions.



- e. In case of failure to replace the accepted and rejected articles from the supplies made, as mentioned in the conditions the loss undergone by the Government will be recovered from the contractor Security Deposit or payment due of any bill(s) to the extend required.
- f. The tender inviting officer will consider extension of time for remitting the Security Deposit as demanded. However, in case of denial to consider such extension the contractor is bound to abide by the limit given and liable to make good for the loss made to the Government on account of his failure to abide by the time limit.

❖ **Conditions of Contract :**

**1. ACCEPTANCE OF TENDER:**

- a. The tender is liable for rejection due to any of the reasons mentioned below:
  - i. Non-Submission of tender within stipulated time online
  - ii. Submission of tender physically in the Office but not submitted online on <https://dnhtenders.gov.in/nicgep/app>
  - iii. Tender is unsigned or not initialed on each page or with unauthenticated corrections.
  - iv. Non-payment of Earnest Money Deposit (if not exempted)
  - v. Non-Submission of required documents as mentioned in schedule
  - vi. Conditional/vague offers
  - vii. Unsatisfactory past performance of the tenderer.
  - viii. Items with major changes/deviations in specifications/ standard/ grade/ packing/ quality offered
  - ix. Offering an accessory optional even though required to operate the instrument
  - x. Submission of misleading/contradictory/false statement or information and fabricated/ invalid documents.
  - xi. Tenders not filled up properly.
- b. Any discount which the bidder wants to give has to be considered and total final bid amount has to be mentioned clearly in the price bid form on <https://dnhtenders.gov.in/nicgep/app>
- c. Discount offered after price bid opening will not be considered.
- d. The consolidated rates entered in the online website will be taken in to account for preparing price statements. However the tender which is found technically acceptable as well as lowest in terms of evaluated rates only be considered for placing the order
- e. Explanation/ documentary evidence related to offer at any stage from tenderers if required.
- f. The rate should be quoted in the prescribed form given by the department; the **rate should be valid up to One Year from the date of tenderization.**



- g. All/ Taxes/ Duties/ Royalties Charges payable on the sales/ transport etc. Within and/or outside the state shall be payable by the supplier.
- h. The decision of the Tender Inviting Officer for acceptance/rejection of any articles supplied including the decision for equivalent specifications, standard and quality etc. of articles shall be final.
- i. The right to accept or reject without assigning any reasons or all tenders in part or whole is reserved with the Tender Inviting Officer and his decision(s) on all matters relating to acceptance or rejection of the tenders as a whole or in part will be final and binding to all.
- j. No separate agreement will be required to be signed by the successful tender(s) for the purpose of this contract for supply. Rates tendered/offered in response to the concerned Tender Notice shall be considered as acceptance of all above terms and conditions for supply for all legal purpose.
- k. Bidder / its sister concerns / companies where its Promoters / Directors either directly or indirectly are involved, should not have ever been blacklisted in tender / supplies by any state/Central Govt . Bidder should submit affidavit in this regard. The bidder should provide accurate information of litigation or arbitration resulting from contracts completed or under execution by him over the last ten years. False affidavit would lead to blacklisting and termination of the contract at any stage. In such cases all the losses that will arise out of this issue will be recovered from the Tenderer / Contractor and he will not have any defence for the same. In case of bidder / principal is involved / penalized under any investigation of CVC or any State/Central Govt. Commission in relation to the similar work project issue; the bid will be out rightly rejected.





## 2. BACKGROUD OF WORK EXECUTION:

### 2.1 Summary of software that need to be integrated:

#### **eAarogya :**

e-Aarogya is web based Hospital and Health Management software designed in-house with aim to computerized the functioning of hospital; from capturing patient health record to inventory management and to bring all the health facility under one umbrella. It also has a strong interface with laboratory and PACS Imaging Services. It follows national and international standards like DICOM, ICD 10, SNOMED-CT.

Coverage (Geographical) : e-Aarogya covers entire Government health facilities in territory of Dadra and Nagar Haveli and Daman and Diu form District Hospital to Health and Wellness centre. e-Aarogya has two instances with separate database, one is hosted at SVBCH hospital in Silvassa on which all the government health facilities of DNH runs and other is hosted at Government Hospital Marwad, Daman on which all the government health facilities of Daman and Diu runs

#### **Software Development Technologies:**

Web based application developed in Java EE (SDK 7)

Architecture: Spring MVC(Model View Controller).

Framework: HMS Spring2, Hibernate3and for APIs Spring 5 and Hibernate 5

Front End : JSP, HTML, Javascript, JQuery, AJAX.

Backend : Java

Web Server : Tomcat 8.

Web Server for PACS: Jboss 5

Database: Postgres 9. 5

#### **National Digital Health Mission :-**

The National Digital Health Mission (NDHM) is working on bringing interoperability for digital health data in India. NDHM will manage the foundational digital building blocks that need to be adopted by all healthcare providers in the country.

Any Healthcare provider who is creating health data (diagnostic reports, discharge summaries, prescriptions, etc) digitally should participate in NDHM. They will be able to share these records with the patients and also fetch records issued by other providers with user consent.

Obtaining these benefits from NDHM requires the hospital / lab information management system or electronic medical record software that is being used by the healthcare provider to be upgraded to become NDHM compliant.





The software being used by the provider must integrate with the digital building blocks of NDHM and comply with the guidelines outlined in this document. Healthcare providers are required to check with their vendor or inhouse software team and ensure they are working with NDHM compliant software.

The NDHM sandbox has been setup to enable any software to integrate with the digital building blocks and test their compliance to the guidelines and digital health standards. The sandbox offers all the Open APIs available under NDHM. Healthcare software developers are required to apply on the sandbox website (dev.ndhm.gov.in) for access. Full documentation on the Open APIs, a discussion forum for support, a hosted environment containing the digital building blocks and a test harness that will check for compliance is available at the sandbox.

NDHM requires the software be certified for compliance. NDHM will notify the agencies who are empaneled to certify the software is compliant to NDHM requirements. This is required to ensure correct capture and linking of health ids, secure storage of health data, use of standards in data exchange, etc.

Once a healthcare provider has access to a compliant NDHM software, they need to sign up their facility in the facility registry at (facility.ndhm.gov.in). They will receive a set of digital keys that need to be configured in their NDHM compliant software.

With these keys and adoption of the NDHM compliant software at their facility, the healthcare provider will be able to register and issue Health IDs, issue health records digitally to patients and request and view patient's medical history with their consent.

## 2.2 NDHM Digital Building Blocks

The following are the core NDHM digital building blocks that enable an interoperable ecosystem

1. **Health ID:** Every person who wishes to participate in the digital health ecosystem must start by getting a Health ID. These IDs can be obtained via self registration (healthid.ndhm.gov.in), from a PHR mobile application or at any participating healthcare provider. It is recommended that each person should have only one Health ID and they must provide it to their healthcare providers during their visit. Health IDs can be optionally linked to Aadhaar. Several Government schemes may accept only Aadhaar linked Health IDs.
2. **Digi Doctor:** NDHM maintains the national directory of all doctors and enables them to participate in the digital health ecosystem by enabling eSign for prescriptions, discharge summaries, clinical notes etc. All doctors at healthcare providers that are participating in NDHM are required to enroll at Digi Doctor (doctor.ndhm.gov.in).



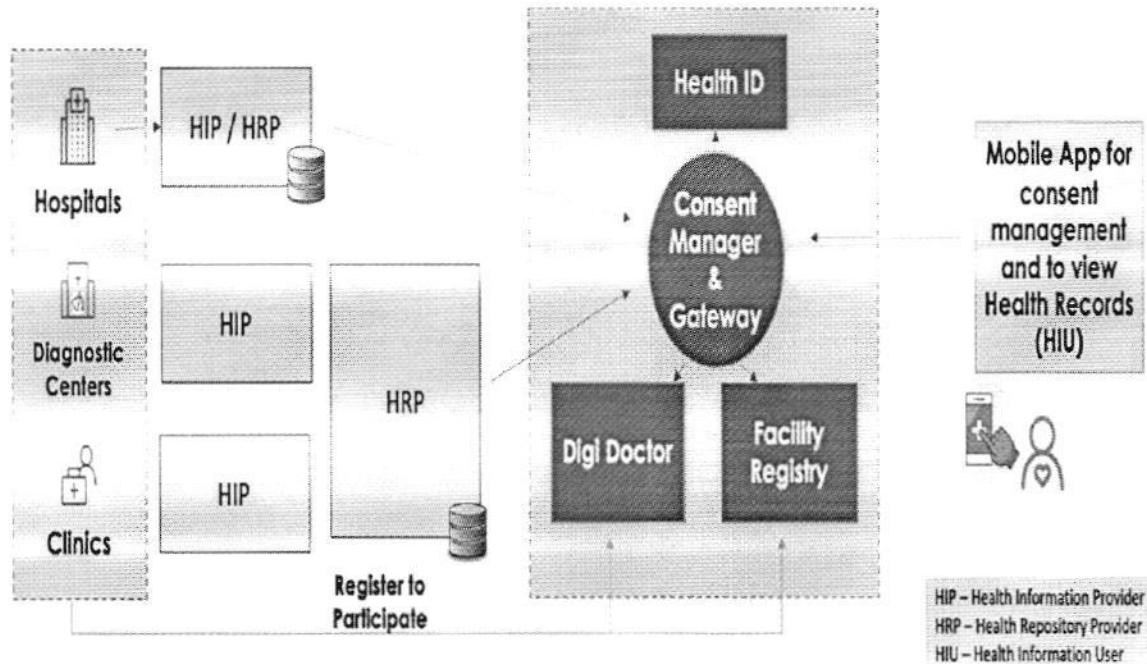
3. **Health Facilities Registry** : NDHM maintains the national directory of all health care facilities. Any participating facility needs to sign up in the health facility registry at [facility.ndhm.gov.in](http://facility.ndhm.gov.in) This ensures they are valid facility that is authorized to issue health records in the ecosystem
4. **Consent Manager and Gateway**: The exchange of health information is enabled by the consent manager. Health records can only be issued / viewed with patient consent. The consent manager manages issue, grants and revoking of consent by users.

**There are several entities in the ecosystem that has to integrate with eAarogya.**

1. **Health Information Provider (HIP)** – Any health care provider who creates health information in the context of treating a patient and agrees to share the same digitally with the patient using the consent framework adopted by NDHM is called a health information provider (HIP). All hospitals, diagnostic centers, clinics, public health programs, telemedicine players, etc are encouraged to become HIPs.
2. **Health Information User (HIU)** – Any entity that would like to access health records of users is called a Health Information User. This would include hospitals / doctors who would like to view medical history of patients, mobile applications that want to display health data to users including Personal Health Record applications, etc. Access to Health data is available to a HIU only with user consent.
3. **Health Repository Provider (HRP)** – Health repository providers are software service providers who offer NDHM compliant software and long term record storage to hospitals, diagnostic centers, and clinics. The service enables these healthcare providers to become HIPs or HIUs and meet their obligations of sharing and securely maintaining health records of patients digitally. HRP offers long term storage of health records on behalf of a HIP. For example, a hosted lab information management system provider (LIMS) may update their software to become a NDHM compatible Health Repository Provider. Any lab using this LIMS software can rapidly become a HIP by adopting the software.

The following diagram describes the NDHM building blocks.





A large hospital could hold the records of patients in long term storage on premises or in the cloud as per its own policies. These hospitals will play the role of both HIPs and HRPs in the ecosystem

Smaller diagnostic centers / clinics may use a specialized health repository provider who provides hosted SaaS solutions to help them issue documents to patients and holds the same in long term storage. The SaaS provider plays only the role of the HRP and supports the healthcare provider to become a HIP and participate in the NDHM ecosystem.

## 2.3 Guidelines for Health Information Providers

All healthcare providers are expected to become Health Information Providers over time. They must share a digital copy of any health report they currently provide as a physical printout to the user via the NDHM architecture. Any Hospital, diagnostic center, clinic, public health program, telemedicine provider, etc. who are creating health records for patients can become a HIP by signing up with the NDHM health facility registry and are verified to be a healthcare provider. The health facility registry will issue them keys that needs to be configured in software that is certified to be compliant with NDHM standards.

### 2.3.1 Obligation of Health Information Provider

Healthcare providers commit to the following when they agree to become HIPs

1. **Collect Health ID during registration** – As Health IDs start to get widely adopted, HIPs must ask users if they have a Health ID and rapidly capture and validate Health IDs at the point of patient registration.



The process to be followed for correct **capture and verification** of Health IDs is out line in section 3.3. HIPs understand that this process is **voluntary**, and they will not force any patient to provide a Health ID if they do not want to share it.

2. **Issue Health ID to interested users** – HIPs are expected to educate patients and help create Health IDs for those that require assistance. Several sections of society will require assistance include the elderly population, illiterate users etc. Aadhaar linked Health IDs can be created for those that do not have a mobile phone. It is recommended that a printed Health ID card is provided to these patients to ensure they can use this card across multiple health institutions. If a Hospital is already issuing a patient registration card, it is encouraged to include the Health ID No and the Health ID QR code on its existing cards. This integration can be achieved using the Health ID Open APIs. The process for issue of Health IDs is described in section 3.2.
3. **Link the Health ID to their health records and notify on new records** – HIPs must store the Health ID collected and verified along with any health records they are creating for the patient. HIPs are expected to continue to have their own provider issued patient id and only link the Health ID in their systems from those users who voluntarily provide the Health ID. When a new health record is generated for a user, HIPs notify the same directly to user via sms or via the consent manager. The process is described in section 3.4
4. **Operate a HIP service** – The HIP service is an online system that responds to data requests from the consent manager. The HIP service must be compliant to the NDHM Open APIs. The service is designed to ensure that sharing of any records is only after validating the user's consent. Any record shared must meet the minimal health data interchange standards. These standards are designed to allow the HIP to start issuing records in existing formats (like PDF) and migrate to structured health data formats in FHIR over time. The HIP service also needs to meet the security and privacy guidelines specified by NDHM. The service must offer high uptime and availability. The NDHM infrastructure uses a set of heartbeats to measure the uptime of the HIP service. All HIP / HRP services must first integrate with the NDHM Sandbox and undergo a certification to be enabled on the NDHM network. Health Repository Providers normally use cloud hosted systems and enable HIPs to offer the HIP service. If a provider wants to play the role of both HIP / HRP – they must setup an infrastructure with a reliable connectivity, a static public IP and certified HIP service.
5. **Maintain OPD and IPD records digitally for the long term** – The HIP/HRP is expected to store digital formats of the health records for as long as possible. All HIPs / HRP are expected to store data for a minimum period of at least 10 years. For diagnostic reports like CT Scans / MRIs which are very large, storage of the full resolution images (preferably in DICOM formats) is required for at least 15 days. The user must be allowed to download such files and store a copy in their Health Locker which is their personal storage. For these diagnostic reports the HIP / HRP is expected to store the radiologist opinion and sample images that are normally part of the printed report provided to the patient for long term.



6. **Share aggregated data for public health** – Every HIP service also generates a data feed with details of number of patients treated, number of treatments provided, number of tests conducted etc for public health purposes. Data from these services will be aggregated in a federated health analytics platform at the state and central levels. The analytics platform will aggregate data at a town level (for tier 2 towns and above) and a sub-district level for all other areas. No individual HIP level data will be available to any entity including the Government to maintain privacy / confidentiality of a HIP's services.
7. **Migrate Health data on change of status** – Health care providers could shutdown services, move locations, change their HRP, etc. These scenarios can impact the HIP service and availability of Health data for their patients. HIPs commit to properly migrate data to an alternate provider in such scenarios. NHDMD will offer health repository services that will host data for specific cases when a HIP/HRP is unable to provide continuity of services. The detailed policies for the same will be worked out in consultation with the industry.

### 2.3.2 Issuing Health ID to interested users

Any user who wishes to obtain a digital copy of their health records must first obtain a Health ID. The process is fully voluntary. Users decide if they want to have Health ID and also decide when to share it with a healthcare provider. Health IDs can be created by either self-registration or in an assisted manner at a healthcare provider or other authorized entities. HIPs are expected to educate users on obtaining a Health ID to access their health records digitally.

**Self-Registration** -- Health IDs can be created by minimally providing Name, Year of Birth, Gender and either a Mobile or an Aadhaar number. Most users with smart phones are expected to self-enroll for the creation of a Health ID by downloading a PHR mobile application or on <https://healthid.ndhm.gov.in>. Once a healthcare provider becomes a HIP, every user who registers with the HIP with a mobile number must be sent a notification that they can access their records digitally by downloading a compatible PHR mobile application. These mobile applications help create a Health ID during their signup process. Users must be encouraged to only create only one Health ID. This will help bring all their health records into a single longitudinal view. Users who self-register can select an easy to remember Health ID of their choice like xyz@ndhm.

**Assisted Registration** – Healthcare providers can assist patients to create Health IDs. This is especially required in the case of the elderly, illiterate and those without mobile phones. Every Health ID must be only created with clear consent and post education of the user that the Health ID will enable them to access their digital medical records. Healthcare providers can either use <http://healthid.ndhm.gov.in> or integrate with the Health ID Open APIs from their own software.





Health IDs can be created with Aadhaar. This is recommended for patients who do not have mobile phones or are illiterate. An Aadhaar linked Health IDs can be only created after a successful Aadhaar eKYC which requires a biometric or OTP based authentication. Healthcare providers must setup a desk with an Aadhaar certified biometric device to capture either fingerprint or iris biometrics. UIDAI publishes the list of certified devices on its website. See <https://uidai.gov.in/ecosystem/authentication-devices-documents/biometric-devices.html>. All patients obtaining Health IDs via an assisted mode must also receive a printed physical card containing the Health ID number and the QR code from the Health ID service. The Health ID service provides a standard card format that can be printed, folded and put into a plastic pouch or laminated. Users must be educated and encouraged to produce their Health ID at every Health care provider.

**Health ID and existing health provider cards** – Many health providers already issue patient identifier cards containing a provider specific patient id. These providers are encouraged to update their processes to include the Health ID No and the Health ID QR code on their existing cards. This can be achieved by integrating with the Health ID Open APIs in their software.

**Health ID and Children** – Newborns and children must be issued Health IDs linked to a nominee – usually a parent or guardian. Ensuring newborns get a Health ID ensures that vital information from their birth weight, immunization records, etc become part of the child's longitudinal health record

**Users who do not want Health IDs** – NDHM guiding principal is to put the user in control of their Health data. There are many scenarios where a user may not want a Health ID or provide a Health ID to a care provider. HIPs are expected to follow their normal process of Patient registration and care if a user does not want a Health ID. HIPs are encouraged to minimally capture Name, Year of Birth, Gender and Mobile numbers for all patients.

### **2.3.2 Collect and verify Health IDs during patient registration**

Hospitals, Diagnostic centers, Clinics and all HIPs are expected to follow a recommended process of collecting and verifying Health IDs during patient registration. No one likes waiting in queues – Health ID is designed to lower patient registration times and help both the user and the healthcare provider ensure correct patient identification, retrieving of patient medical history prior to treatment and proper linking of any new health records created for the patient.

All QR codes described below are standardized by NDHM for interoperability across the ecosystem.





**Provider scans the Health ID QR Code**—All users who already have a health id can show the Health ID QR code in their PHR mobile application or a physical print out of their Health ID card. HIPs can use a QR code scanner to rapidly scan the code. The QR code contains the Health ID No, Health ID (user selected), name, date of birth, gender and mobile number of the user. The information is also digitally signed by NDHM and can be verified offline to be authentic.

**User scans a HIP QR Code** – The health provider can paste a HIP QR code on their registration desk. Users with PHR mobile applications can simply scan that code and consent to sharing their Health ID with that provider. The Health ID details are posted to the HIP service. The software used by the registration desk can retrieve the scanned Health ID and rapidly register the user. The HIP will get all the details in the Health ID including Health ID No, Health ID (user selected), name, date of birth, gender, mobile number and address of the user.

**User verbally shares Health ID or Health ID number**—If the users shares their Health ID or Health ID number verbally during registration, the system is expected check if this is a valid Health ID via an Open API. The API confirms if the ID is valid and also the authentication methods supported for this ID. The registration desk can choose an appropriate method to authenticate the user. The following Authentication methods are supported

- a. Mobile-OTP – An OTP is sent to the user mobile linked with the Health ID. The user must share the OTP with the registration desk for verification
- b. Mobile-IVR – User will receive a call on the mobile linked with Health ID. User confirms acceptance by pressing a key after listening the message
- c. Mobile-App-Notification – A request to share the Health ID will be pop up in the user PHR application. The user can consent in the application to share the Health ID
- d. Password – Not used during registration capture. This auth method is used to authenticate the user in mobile applications or websites.
- e. Aadhaar-OTP- A OTP is triggered with the Aadhaar linked mobile number of the user. He must provide the OTP to the registration desk to complete the authentication.
- f. Aadhaar-Biometric – Healthcare provider can perform a biometric auth using either fingerprint or iris to authenticate the user.

On successful verification, the Healthcare provider will be able to obtain the details of the Health ID including name, date of birth, gender, mobile number and address of the user.

If for any reason an authentication is not feasible or not desired by the healthcare provider or user, then the registration desk must capture the name, date of birth and gender of the patient manually. The Health ID along with the demographic information can be verified via a **Demographic verification Open API**.



**HIP initiated linking**—if the user has shared their Health ID and it has been verified by one of the methods described above, then the HIP must notify the Consent Manager of any new health records created for this user. The HIP should implement the HIP initiated linking process outlined in the API specifications

**Updating Health ID related information** – Once the HIP has performed a successful authentication of the Health ID with the user, he can provide additional services including

- a. View demographic, contact, nominee and relationship information associated with the Health ID
- b. Update address / contact numbers for the user
- c. Link Aadhaar to their Health ID
- d. Add / change a Nominee to their Health ID
- e. Update relationship information and link Health IDs of parents or children

**Failed Validations** -- If the authentication of the Health ID fails, The HIP *must not* to store the failed Health ID in the HIP records.

**UserswhodonotprovideaHealthID**-ForuserswhodonotprovidetheirHealthIDatthe time of registration, HIPs must register them using their existing process. It is recommended that the following minimal information must be collected by all HIPs during user registration.

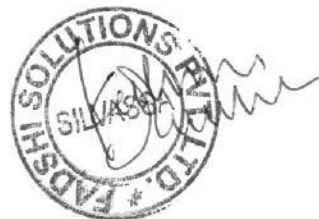
- a. Capture Name, Date of Birth, Gender and Mobile of the user
- b. If user provides age convert it into year of birth and confirm with the user
- c. Validate the mobile number by sending an OTP to the user

#### **Notifications and Linking of Health Records**

Every Health ID in the NDHM ecosystem is linked to a health data consent manager. Health IDs and Health ID numbers are represented like *xyz@ndhm* where @ndhm represents the health data consent manager. NDHM expects there to be multiple consent managers in the ecosystem over time.

The consent manager maintains information on which HIPs have health records for each Health ID. HIPs links a care context for each health encounter of the patient with the consent manager. Each care context can contain multiple health records like diagnostic reports, discharge summaries, prescriptions, etc.

HIPsareencouragedtoshareadigitalcopyofanyreportthattheyshareasaprintedreportwith patients. This includes diagnostic reports, discharge summaries, OPD notes, prescriptions, etc.



If the HIP has collected and verified a Health ID from the patient, the HIP must use the HIP initiated linking method to link the care context with the associated health data consent manager. The consent manager will notify the user that a new health record is available and allow the user to access the same on their mobile or save a copy into their Health Locker.

If the HIP does not have a verified Health ID, but has captured the mobile number of the patient during registration, the HIP must send a SMS containing a deep link to the user. The content of the SMS should educate the user that they can access their health records from the healthcare provider. NDHM will specify the deep link to point to a category of PHR applications. The user will be able to select and download any PHR application of their choice from the marketplace. The PHR app will help create a Health ID and retrieve the health record from the deep link using the **discover and link** method. In the discover and link method, the user searches for a facility he has visited earlier, shares his name, year of birth, gender, verified mobile number and an optional patient id. The HIP searches for any health records that match this information and then links the same with the consent manager.

## 2.2.4 Format of health records to be shared

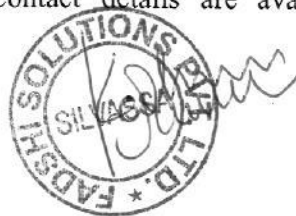
NDHM is defining the Health data interchange standards to ensure that data shared by HIPs can be correctly presented by HIUs. India is currently quite poor in implementation of health data standards. NDHM's approach is to ensure that data in existing formats can be made available to the user while it works with the ecosystem for stronger adoption of eHealth standards.

All health records will use FHIR R4 resource bundles that have been profiled for the Indian context in collaboration with National Resource Centre for EHR Standards (<https://www.nrces.in/>)

The Health data interchange standards v1.0 covers the following document types

- a. **Diagnostic reports**—Formats are available for both pathology and radiology reports. While the format allows for existing PDFs / Images to be attached, we encourage HIPs to move to a strongly coded format over time. Full DICOM images (Imaging studies) are not yet supported and will be released in the next version
- b. **Discharge summaries**—For all inpatient records compliant to MCI guidelines
- c. **Prescriptions** – Can be shared as structured record or as simple text and instructions, compliant to MCI guidelines
- d. **Clinical notes**—Can be used to capture OPD/IPD notes

Additional document types and resources including immunization records will be released shortly. If there are specific types of documents that are currently not covered or areas that require more attention, pls write the NDHM team. Contact details are available at <https://dev.ndhm.gov.in>



## 2.3 Health Repository Provider Guidelines

Health repository providers are software service providers who offer NDHM compliant software and long term storage of health records to hospitals, diagnostic centers, and clinics. HRPs are required to fully comply with all guidelines specified for HIPs. Their primary role is to enable HIPs meet their obligations of sharing and securely maintaining health records of patients digitally. For example, a hosted lab information management system provider (LIMS) may update their software to become a NDHM compatible Health Repository Provider. Any lab using this LIMS software can rapidly become a HIP by adopting the software.

- a. The upcoming personal data protection bill (PDP Bill 2019) outlines a data fiduciary role to anyone creating personal data. All Healthcare providers will be data fiduciaries as they create personal health data. Health repository providers will help healthcare providers to meet the data fiduciary obligations under the personal data protection bill.
- b. Health repository providers must provide long term storage of health records and high availability of the HIP service.
- c. Large healthcare providers and public health programs play both the role of HIP and HRP. For example the e-Hospital software from NIC would enable one or more district hospitals and also maintain all the health records created at the hospital for several years. The RCH program would maintain the immunization records of children as a HIP / HRP for several years.
- d. HIPs / HRPs are expected to store digital records of both **outpatient** and **inpatient** treatments in a long-term storage and make them accessible to the health information provider service. HRPs are expected to use storage optimization techniques that provide high efficiency. Large format files like CT Scans/MRIs are expected to be available for a period of 15 days. Users are expected to download and save in their own private Health Lockers. For these diagnostic reports the HIP / HRP is expected to store the radiologist opinion and sample images that are normally part of the patient for the long term.
- e. There will be several scenarios when a HIP / HRP may not be able to continue to keep health data for patients, for example when they decide to stop providing health services. HRPs will need to ensure they comply with NDHM data migration guidelines to ensure there is no impact for patients.

## 2.4 Health Information User Guidelines

Any entity that would like to access health records of a user is called a Health Information User. This would include hospitals / doctors who would like to view medical history of patients, mobile applications that want to display health data to users including Personal Health Record applications, etc.



1. Any entity that wants to become an HIU will need to register itself in the Health information users registry maintained by NDHM.
2. No records will be accessible to HIUs without the consent of the user. Consents in NDHM are based on the MeitY consent framework <http://dla.gov.in/sites/default/files/pdf/MeitY-Consent-Tech-Framework%20v1.1.pdf>. A digital consent arte fact defining the purpose of use, the amount of time data will be available to the HIU is created each time the health records are shared.
3. Any health data that is held by an HIU is bound by the data rules set in the consent arte fact provided along with the data. The data section of the consent artifact provides for view or copy rights including the period for which the data can be retained by the HIU.
4. Consents can be revoked. Users may revoke access to information at any point they desire. HIUs implementations will require certification to ensure they adhere to the rules of the consent artifact.
5. All data shared from the HIP need to conform with the Health Data interchange specifications. The specifications allow simple PDF documents / images to fully structured and coded health data to be shared. HIUs need to correctly handle variations of the health record formats as per specifications.
6. Any health records obtained by the HIU needs to be stored and managed securely

## **2.5 NDHM Sandbox for HIP and HIUs**

The NDHM sandbox is the starting point for software developers who wish to ensure their healthcare software is compliant to the HIP and HIU specifications.

1. Access to the Sandbox and its APIs is open to everyone under the NDHM Sandbox policy. Just sign up at <https://sandbox.ndhm.gov.in/> to obtain access
2. The Sandbox hosts of the following digital building blocks that are useful for anyone wanting to comply to the HIP, HRP and HIU guidelines
  - a) Health ID Service and APIs – Create a sandbox Health ID, integrate your software with the Health ID APIs
  - b) Consent Manager and Gateway – Register your software as a HIP or HIU and ensure you are able to correctly link records, process consent requests
  - c) Sandbox PHR Mobile Application for Android – Use the application to manage your Health ID, view health records and manage consents
  - d) Sandbox HIU application to create consent requests for a Health ID





- e) Sandbox Digi Doctor and APIs to register and verify doctors
  - f) Sandbox Health Facility Registry and APIs to register and verify facilities
3. Documentation will be available on all the Open APIs hosted in the Sand Box
  4. Discussion forum where the NDHM team will answer tech queries and support implementers in the process.
  5. NDHM test harnesses that will allow developers to check their implementation against the Open APIs
  6. Once a software system has been integrated and tested in the Sand Box, it can apply for NDHM compliance certification. NDHM will notify the agencies who are empanelled to certify the software as compliant to NDHM requirements. This is required to ensure correct capture and linking of health ids, secure storage of health data, use of standards in data exchange, etc
  7. HIP identifier and access keys will be issued only post verification in the Health Facility Registry. This ensures only valid healthcare facilities participate in the NDHM ecosystem
  8. HRPs and HIUs will be able to obtain access keys post certification. This ensures that only compliant software is enabled in the NDHM production systems.

### **3. Bid Evaluation Methodology :**

- A. **Preliminary Evaluation:** Tender Fee and EMD Submission.
- B. **Technical Evaluation:**
  - Scrutiny of technical specifications and other relevant documents as asked by the department with the quoted specification.
  - Scrutiny of Compliance Statement given by the bidder.
- C. **Financial Evaluation:** Lowest quoted offered by Technically Qualified Bidders

### **4. PAYMENT TERMS :**

- a. 100% of the invoice amount will be paid only after competition of work successfully and submission of Security deposit i.e. 10% of the tender value.
- b. Price escalation clause will not be entertained under any circumstances.
- c. All bills should be in **TRIPLICATE** and should invariably mention the number and date of work order.





- d. All bills for amount above ₹.5,000/- should be pre-receipted on a Revenue Stamp of proper value. Bills for amount exceeding ₹.5,000/- not pre-receipted on Revenue Stamp of proper value will not be accepted for payment.
- e. Each bill in which Service Tax is charged must contain the following certificates on the body of the bill: “CERTIFIED” that the service on which Service Tax has been charged have not been exempted under the Central Service Tax Act or the Rules made there under and the amount charged on account of Service Tax on these service is not more than what is payable under the provisions of relevant Act or Rules made there under”.
- f. The rates should be quoted only for the work specified in the list of requirement.

Signature of Agency  
With Rubber Stamp



*Sd/-*  
**Director**  
Medical & Health Services  
U.T. of DNH/DD  
“Tel.No.0260-2642940, 2640615”  
email ID : svbch.sil@gmail.com