Dear Sirs,

We welcome the implementation of the NDHM vision. This will, over time, create a very positive impact on the health care ecosystem of the country.

We would also like to congratulate you on the systematic way in which you are implementing the project, involving all stakeholders, and asking for feedback at every step.

Our comments follow:

Chapter 2

2.2. BENEFITS & RISKS

a) An important & urgent benefit is the discovery of the availability of medicines, beds and other resources are a critical requirement today and is an important benefit.

b) Enabling payments is another important benefit. The **risk** is that patients may be reluctant to pay in advance, and health care facilities may insist on advance payments. This will be especially true from stand along doctors or small brands. The NDHM can **mitigate the risk** and become a trusted third party that collects the fee from the patient in advance and only sends it to the health care provider once the service is delivered.

c) An important benefit is the opportunity to quickly establish data standards so that we start to see coding of diagnosis, drugs, treatment procedures, diagnostic tests. While the use of images and scans is ok as a first step, there is a significant **risk** that this will remain the practice for a long time. To **mitigate this risk**, there should be defined sunset clause for different types of information. Machine readable data is critical as it will help in the individual treatment by identifying issues as well providing information to the doctors about the changes over time. Just providing a summary of previous diagnosis, current medication prescribed by different doctors and a list of medical procedures will have significant benefits as this information is very easy to overlook when dealing with scans and images. There are also massive benefits of aggregated, anonymised data to the community.

Chapter 3

Q 3. Are there any other primary or secondary stakeholders that should be considered while building the interface? If yes, please outline their role in the UHI ecosystem.

We should include:

a) Primary Heath care clinics and providers. (Including digital providers) - HSPs
b) Insurance companies - payers
c) Subscription based health care services – payers, HSP
d) Wellness companies - HSPs

Q 4. Please comment if there are other objectives which must be included in section 3.4.

While the paper does mention data & digital information, this really needs to be called out as a important objective of NDHM. We would recommend the following additional objectives:

Establish data standards for coding of diagnosis (for primary care & also secondary & tertiary care), drugs, treatment procedures, diagnostic tests. While the use of images and scans may be allowed in the initial phase, there should be defined sunset clause for different types of information. Machine

readable data is critical as it will help in the individual treatment by identifying issues as well providing information to the doctors about the changes over time. Just providing a one or two-page summary of previous diagnosis, current medication prescribed by different doctors and a list of medical procedures will have significant benefits as this information is very easy to overlook when dealing with scans and images. There are also massive benefits of aggregated, anonymised data to the community. This can help with:

i) Establishing a Digital prescription format with diagnosis codes, biometric data, and standard drug codes. This digital prescription can flow to pharmacy systems. This will reduce the changes of the wrong drugs being dispensed. Also this will allow for the development of systems that provide alerts about drug interactions based on patient history. The Dubai Health Authority has established a e prescription system that could provide some learnings.
ii) Diagnostic report in a standard, machine-readable format is a crucial objective missing in the document. It will help to track changes over time as well allow for the development of systems that can generate a simple presentation for doctors as well as insights and alerts. Currently doctors rarely have the time to look as a large volumes of scanned or paper records.
iii) Exchange of information between hospitals and insurance companies.
iv) Hospital can quickly access emergency medical information of the patient who met with an accident or other critical condition.
v) The design of government and non-government programmes to address the needs in specific geographies or population.
vi) Generation of community level clinical insights that would be critical inputs for drug development, and improvements in treatment protocols etc.

Another objective that should be considered is the possibility and facility to use of Hindi and other local languages in the ecosystem.

Q.5. UHI will support a range of digital health services and is expected to evolve with time. What digital health services should the initial version of UHI focus on?

We recommend the following phases:

STEP 1: Availability of hospital beds, oxygen beds, ICU beds, ambulances, diagnostics, and other critical care facilities.

STEP 2: Establish data standards for coding of diagnosis (for primary care & also secondary & tertiary care), drugs, treatment procedures, diagnostic tests. While the use of images and scans may be allowed in the initial phase, there should be defined sunset clause for different types of information. Machine readable data is critical for sharing information and will help in the individual treatment by identifying issues as well providing information to the doctors about the changes over time. The following phasing may be considered, based on the complexity:

Phase 1: Blood test & radiology reports
Phase 2: Primary care diagnosis codes
Phase 3: Drugs – coding the pharmacopeia
Phase 4: Implement digital prescription eco system
Phase 5: Coding of diagnosis and treatment procedures in secondary & tertiary care facilities

STEP 3: Personal Health Record – storage and sharing

STEP 4: Doctor & Facility discovery & booking and payment system.

Chapter 4

Q.6. Have all incentives / disincentives for various stakeholders to participate been covered in chapter 4? If not, please provide the list and mention the role and description of the stakeholder.

Payers like health insurance, healthcare aggregators, wellness companies, healthcare providers play a vital role in making healthcare affordable. Payers manage to get attractive pricing for the healthcare services, which are 30-40% lower than walk-in rates as payers drive huge footfall for both OPD and IPD treatments.

Q.7. For the disincentives mentioned in chapter 4 and as an answer to Question 1 of chapter 4, please provide possible mitigating measures that may be taken to minimize the impact of said disincentives.

Include Insurance companies, healthcare aggregators, wellness companies, and healthcare providers as payers. Including the payers in the system will only help reduce out-of-pocket expenses for both OPD and IPD treatment – this is currently around 60% of the overall healthcare expenditure.

Chapter 5

Q.8. In the proposed discovery model in section 5.1.3.1 EUAs are expected to present all responses returned by the Gateway to the user and allow the user to choose the HSP. Should any alternate models be allowed? If yes, provide details.

1. EUA & HSP combination: The paper already allows the same entity to play the role of a EUA and a HSP. This is an important use case as this will cover many hospitals, clinics and telemedicine companies. In case a company is both a EUA & a HSP, it should be permitted to first offer in-house medical facilities including their own doctors, labs. The customer should also have the option of viewing and using the larger ecosystem via the Gateway.

Insurance companies, healthcare aggregators, wellness companies, and healthcare providers may also function as EUAs. Such players should be allowed to publish a curated list of providers for both OPD & IPD. For example, a list of hospitals supporting cash less claims. Similarly centres of excellence for specific procedures which may have fixed packages negotiated with the insurance company or aggregator.

When an EUA is providing preference to a set of HSP, including itself, this must be clearly communicated to the user.

2. Distance criteria for digital HSPs: The gateway should also consider that digital companies like telemedicine providers are location agnostic and can be accessed from anywhere – including the patient's home or office. Thus, if the search result is using distance as a criteria, suitable provisions should be made for the display of these digital services.

3. Patient Ratings: The exclusive use of patient ratings may result in sub optimum results. A doctor should provide good customer service, but he should not be in a popularity contest. This may result in un-predictable and clinically sub optimal results and the exclusive use of patient ratings should be reconsidered.

Q.10. Are there any other areas that must be supported by the Gateway for service fulfilment in section 5.1.3.3? If yes, provide details.

We need consider the data flow back from the HSP. What action of the HSP will be considered for service completion? For example:

i) Releasing a digital prescription back to the Gateway to close a OPD consultation
ii) Releasing diagnostic reports back to the Gateway to close a health check-up
iii) Delivery of medicines for a pharmacy
iv) Discharge summary for the fulfilment of IPD services

The feedback loop is critical. All the records received by the Gateway can automatically be stored in the patient health records. Ideally the feedback loop should quickly move to structured data and not scans so that digital, machine-readable records can be maintained and used for data presentation & analysis.

Q.11. Post-fulfilment, as described in section 5.1.3.5, covers ratings and grievances. Are there any other areas that must be supported by the Gateway for post service fulfilment in section 5.1.3.5? If yes, provide details.

Getting a valid prescription, report, or discharge summary in the last six months should be used as criteria to allow a user to rate the healthcare service provider. A health care provider should have an opportunity to connect with the patient and clarify/resolve the grievance. If there is no response from the patient to solve the case within 15-20days, it cannot be considered a grievance. There should be a provision for the patient to change his rating once the issue is resolved.

Thank you for giving us an opportunity to provide the feedback. We would be delighted to support NDHM efforts and get involved in the development of India's health care eco system.

Yours sincerely,

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