

Feedback on Unified Health Interface NDHM

Comments on 1.7.1

1. **DICOM/DICOMweb standard for medical image sharing for telemedicine/teleradiology/teledentistry-** DICOM as a standard supports interoperability between equipment from different manufacturers. DICOM's WG-20 (Integration of Imaging and Information Systems) works closely with HL7's Imaging Integration Workgroup to keep FHIR and DICOM services aligned. FHIR includes a resource that describes references to the available imaging studies, called ImagingStudy. This resource can include references to the base URL of a DICOMweb server (via EndPoint), and the implementer can then use the DICOMweb qualified URLs to query and retrieve the DICOM instances as necessary (including rendered JPEGs).
2. **Remote Patient Monitoring standards-** with wearables and IoT/IoMT devices becoming a standard in patient monitoring, clear directions and guidance around RPM should also be brought under the scope of Telemedicine governance. For chronically ill patients or patients needing long-term care, it will save on a lot of in-person appointments.
3. **ePrescriptions-** A national prescription system should be imagined with ePrescriptions, Prescription transmission and eDispensing facilities. It can follow a message-broker approach of Health Information Exchange (HIE) . Some of the key considerations could be-
 - a. Can follow a XML-based structure on the lines of NCPDP SCRIPT for ePrescriptions in US or the European ePrescription XML formats. HL7 FHIR also has resources for ePrescriptions and those should be looked at for open standards-based interoperability in this space.
 - b. Should include drug-drug interactions information for adverse reactions.
 - c. ePrescriptions could be powered by a medicine reference database with medicines identified by RxNorm terminology.

Comments on 2.4.1

1. The primary risk we see is with regards to data security and privacy in the open-network and open-protocol model. By having clear guidelines with use of blockchain for prescription and health records transmission, OAuth2/OpenID for User Authentication and Authorization and enforcing advanced encryption and transmission-layer level security should mitigate the risks.

Comments on 3.8.3

1. **HL7 FHIR API as the open standard for medical records and ADT (Admission, discharge and transfer) information sharing in UHI-**
FHIR takes a RESTful API-based approach and uses the standard web transmission standards. It can easily meet most of the UHI API requirements and since it is also evolving for other healthcare use cases, FHIR adoption would make the UHI implementation scalable and adaptable. While the earlier open standards from HL7 (v2.x and v 3.x) did introduce a lot of benefits by taking a defined XML-based structure for information sharing, these standards didn't have the flexibility of FHIR's APIs and web transmission and needed additional infrastructure for message transmission and parsing.

Comments on 4.3.1

1. The role of pharmacies as stakeholder and it being the enabler for eprescription services is not covered in section 4.1.2. Pharmacies do appear as stakeholders in Section 3.3 though.