

Long-term Data Preservation and Management of EHRs

Clinical data in digital form represents a “digital library,” and inherits all the same administration and technical issues faced by digital libraries in other fields.



Overview

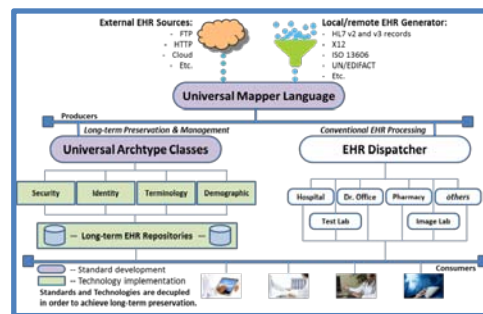
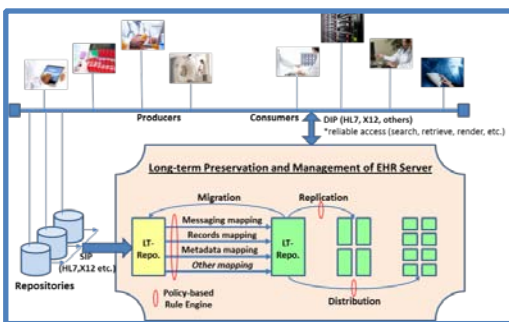
The ability to apply standard and interoperable solutions to manage and preserve electronic health records (e.g. lab test results, CT scans, physician notes, etc.) as well as migrate, distribute, replicate, and access these records from legacy formats and platforms to advanced standard formats and operating systems are vital for clinical care and medical research. However, management and interoperability for preservation, storage, and accessibility of such health data has not yet been defined for electronic health records (EHR).

Industry Need Addressed

It is critical that preservation of clinical information is addressed or valuable and irreplaceable information will become inaccessible or disappear over time. This could lead to disastrous consequences for patient care and research value. Replacing lost data, even if possible, will entail huge costs for patients, clinicians, administrators, pharmacists, and, potentially, the entire country's economy.

NIST Approach

Through research as well as collaboration with government, standard development organizations, and industry, NIST researchers are working to create a standard preservation infrastructure to support a wide variety of electronic health records, data formats, and delivery mechanisms as well as identify, evaluate, and integrate standard and best practice long-term preservation and management tools to migrate, replicate, and distribute EHRs. This initiative will enable NIST researchers to implement a universal messaging mapper to parse an extensive range of protocols, store clinical knowledge into a universal archetype-based record format, and search, retrieve, and access stored electronic health records in the long-term. The figures below show the overall functional diagram and provide the system architecture.



Impact

Establish an interoperable framework that can enable the exchange of EHRs between legacy and future electronic health record formats, and capture clinical knowledge independent from technology while providing standard interface to access and update clinical knowledge.

For additional information, please visit <http://www.nist.gov/healthcare/emerging/recordpreservation.cfm>

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