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Spring 2-1-2020

## **A cloud based approach for secure storage and retrieval of standard Electronic Health Records**

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# **“A cloud based approach for secure storage and retrieval of standard Electronic Health Records”**

## **ABSTRACT:**

In India, patient care is mainly delivered through 3 levels namely Primary/Community Healthcare Centre (PHC/CHC), Secondary Healthcare (SHC)-District Hospital, and Tertiary Healthcare (THC) Facility-Super Specialty Hospital. Individual patient health information is scattered across many levels of the health care system in which consistent data availability at the point of care is very much essential. Currently, many healthcare sectors use hospital-centric approach to maintain and manage hospital information in which patient health information cannot be shared with another hospital at the point of care. Digitization of health records in public health facility and its instant availability in the form of electronic records anywhere any time health service is yet to be implemented in developing nations like India and other countries. This research work proposes to develop a secure cloud based Electronic Health Record (EHR) solution incorporating security framework, and capturing real time patient data at all the three levels of healthcare system including PHC, SHC, and THC. Health data recording and reporting are done using standard coding's such as ICD-10, SNOMED-CT, LOINC, DICOM and NDC. Protection of health information should be a primary concern during the development and implementation of any IT application in a hospital setup. The threats posed to the EHR system are modeled by STRIDE modeling tool, and the amount of risk is calculated using DREAD. The Security framework includes authentication, authorization, attribute-based encryption and access control to mitigate the threats and provide secure EHR system. EHR plays a vital role in capturing, storing, and sharing patient data for providing quality healthcare. The proposed EHR model can be scaled to provide national level healthcare services including patient care, reporting communicable diseases and other health related statistics.