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Enabling Secure Maternal Health Information Exchange using Blockchain

According to UH2030 (2018), medical facilities in Kenya have made efforts to adopt Electronic Health Records systems. However, lack of secure means to share the sensitive personal health records curtails the potential inherent in the shared electronic health records which includes provision of historical health information that is critical to facilitate better informed medical decisions. Concerns for confidentiality of patients' records must be adequately addressed through measures such as data encryption and patient mediated records access. A cloud based blockchain solution accessed using mobile devices would reliably address these concerns and result in access to better quality maternal healthcare services in Kenya. The main objective of this study is to develop a Blockchain distributed ledger model for Enabling Secure Maternal Health Information Exchange. The proposed solution targets inter health facilities within Kenya, then the data protection and access to information acts of Kenya would suffice at this stage. Simulation of records would work initially to demonstrate to target pilot facilities how the system works before scaling to a live pilot phase. Distributed Ledger Technologies (DLT), and specifically blockchain, have the potential to address these and more challenges: Information security, Costs, Enhanced Privacy and Improved Auditability.
The Overall methodical process to be adopted for the study will be that developed by the Kenya Ministry of Health for the development of mHealth solutions. The implementation process provides for stakeholder involvement in the identification of priority issues and areas of intervention as well as their subsequent involvement in the development and system testing activities.

Key words: Electronic Health Records systems, Blockchain, mHealth, Distributed Ledger Technologies (DLT).

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