

Digital Health Passport – Phase 1
CSE 700 – Independent Study
Advance Blockchain Concepts
Bharat Sesham
50338269 – 20/02/2021

The main objective of the app is to maintain a decentralized health passport that allows individuals to store their health reports and vaccination status while protecting their privacy. The initial version of the Dapp will mainly concentrate on the vaccination status and testing results for COVID-19. The clients for the Dapp will be any individual that are currently vaccinating themselves for COVID-19, using the Dapp they will be able to track various aspects of the vaccinations process such as the vaccine batchID, vaccine provider, vaccinated location, vaccination date, current vaccine stage, on-site temperature, and etc. This would also allow the vaccine providers to track their vaccine batches and plan their inventory to meet the supply-chain demand. The users can use the Dapp to scan a unique QR-code provided with the on-site vaccine to on-board the details or enter the details manually into the app that gets stored in a decentralized manner. This would allow the users to track their vaccination status without revealing their true identity and also allows individuals to share their health status and completely control the access to their data. Future versions of the Dapp can incorporate data from various dynamic health data sources, including any lab test reports, prescriptions, medical readings, and any other health-related data.

Modified Idea:

The health data can be divided into three-level hierarchy for easier sharing between parties or individuals. The health asset holders (individuals who own the health pass) can determine the level of access that they can grant to any other individual or requestor. The first level of the data contains the basic health details like if an individual is suffering with any particular health conditions or if they have been vaccinated against a particular virus. This level of access can be helpful to researchers or agencies that are researching to find patterns in a larger demographics or in finding what percentage of the demographic is vaccinated/suffering from a particular health condition. The second level of the data contains more in-depth data related to the conditions mentioned in the first level. The second level data contains the specifics of the health conditions (for example what kind of cancer, type of diabetes, the details of the vaccination mentioned above, prescription etc.). The requestors for the level two data can be any researcher/organization, health care professionals or medical workers that currently require additional information of the patient/health asset holder. Finally, level-three includes lab report, charts, medical readings, or other critical health-related data. Only certain registered requestors can have clearance to even request this level of data from the health asset holders. So, every-time a requestors need access to an individual health information, they have to transact and every level have a different value to get the access. By implementing this, the health asset holders have the option to share the right amount of information based on the level (with the option to mask their identity). This kind of Dapp is also helpful to any insurance company or agency that are trying to determine rules of a new health policies. Also, this could help in standardizing the health data which can reduce repeated testing.