Multimedia Appendix 1. Design features of Prototype A vs Prototype B.

Summary Description of Features	Prototype A	Prototype B
Account Creation and Registration		
Creation of a "public key" for the user, which does not require any identifiable information and allows the user to participate in a pseudonymous manner with app stakeholders.	✔	✔
Requires setting up a 12-word phrase to enter the app		✔
Provide "Emergency Medical Record" section with some identifiable information (e.g., name, date of birth, gender)		Optional
Enrollment into Study		
Explanatory section on Bitmark Inc and the capabilities of a blockchain-enhanced health research infrastructure	✔	
Complete eIC[a] process at onboarding stage of research study workflow	✔	
Health Data Contribution		
Study activities and tasks	✔	✔
Integration with HealthKit for accessing data	✔	✔
All study data are "actively" contributed by the participant and transferred directly to the researcher only	✔	
Requires touch ID or pin-number authorization to initiate each "active" data transfer of study data	✔	
Visual ledger-like representation of metadata tags or "titling" of data onto the Bitmark blockchain	✔	
Authorized Health app study data are "passively" abstracted from the participant phone and transferred to a "data vault" for aggregate analyses by the larger research community		✔

[a]eIC: electronic informed consent