Patient Companion App Prototype Development

Focus Group

I have discussed this with fellow Junior Doctors (F1, F2 and registrar level) and senior Pharmacists. This identified several important aspects required for app development:

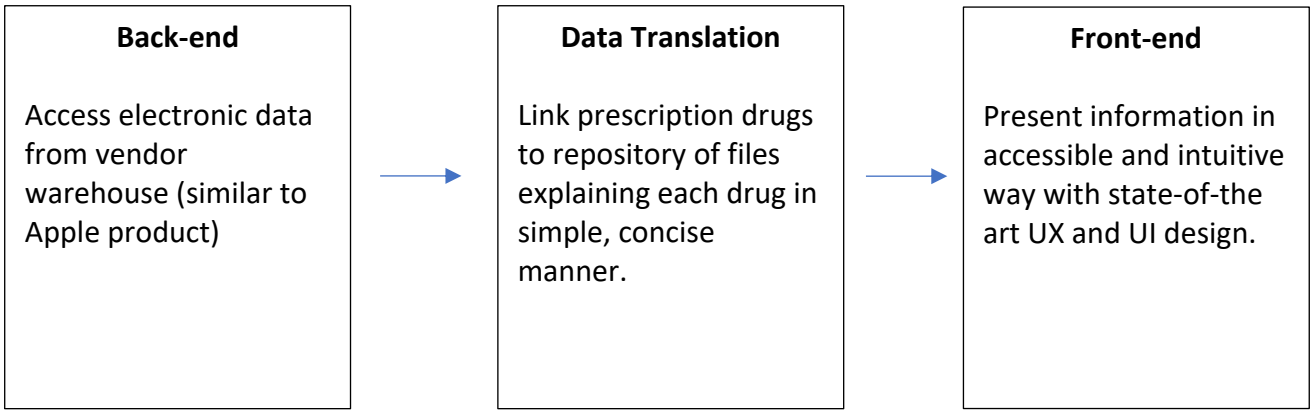
- Wide agreement that there is a need for increasing channels of communication with patients and providing patients with access to real-time information about inpatient stay through a mobile app.
- Furthermore, there was a consensus that inpatient admission represents a golden opportunity to engage people in education about their medication.
- App must initially focus on one area and the most pertinent area the focus group felt was medication. There was a widespread agreement that rapid changes in electronic prescriptions could be communicated to patients in a real-time way.
- App should not create a work-load for staff. The app must take information autonomously from the electronic health record and present this to patients without any manual input from staff. The app must be seen as complimentary to existing communication channels.
- App would need to carefully consider what information is best communicated to patients at what stage of their illness. For medication, this is not a significant issue - as it is providing patients with access to their drug chart (something which does not currently happen). However, if this app was extended to summary of medical records in real-time, it could present challenges with breaking bad news. For example, the system would need to ensure that bad news (e.g. cancer diagnoses) are not insensitively put on the system prior to face-to-face discussion with medical team.

Quality Improvement Project:

To explore people's experience of inpatient prescribing communication and education, I am conducting a quality improvement in my local Hospital. This study seeks to explore whether patients are aware of any changes to their medication

during their inpatient stay, understanding of rationale for such changes and explore whether these changes have been communicated to patients. It will take the form of a questionnaire to be distributed in the Acute Medical Unit and Renal Ward at St George's Hospital. See documentation attached. Data collection for this quality improvement project will commence in November 2020.

Proposed Technological Framework



App Prototype Development

I have built a synthetic database containing the prescription records for over 75,000 people. This database was built using patient prescription records from the National Health and Nutrition Examination Survey, USA. This survey is an annual cross-sectional questionnaire of a representative sample of the US population and raw data is made publicly available. I have developed code to link these prescribed medications to the NHS website drug information leaflet. This code "web-scrapes" information from the NHS website about each drug a patient is prescribed. While the educational resources for Patient Companion will be developed by a team of science communicators, patient representatives and healthcare professionals, in initial prototypes, I will be utilising existing NHS resources to populate the app. Please see attached coding file of prototype model.