CS\_Moreland Application Comments by IMMD.

The main comments are (in ethics application form):

1. project description: the justification of collecting personal recordings is to perform comparison and provide suggestions to users, but this has not been discussed clearly in Q31: how the comparison and suggestion will be performed?

>> *The project will take anonymised voice recordings from current medical practitioners and store on a school server. The recordings come in through whatsapp which has 5 levels of encryption. The files are of unknown origin to the student developer (and future users) and will be accessible only through the project app which will have access information (of any users) stored. All information will be deleted at the end of the project.*

*Comparison of anonymised (true) recordings and user/tester recordings will be done through normalised frequency distribution and histogram analysis for feedback. Advanced comparisons could use phoneme detection but this is unlikely in the timescales allowed.*

*The goal is to have the user able to voice the complex pharmaceutical name in a “similar” or “correct” pattern – and these terms have to be defined for measurement.*

*+google API for text comparison*

2. Q30 a: what is the secure communication channels? how to ensure the data not be shared outside professional use? Here we look for concrete mechanisms to address these concerns, not promise.

*>> medical practitioner data through whatsapp stored on student’s server with access through the app which is not generally shared. Given the timescale left we cannot have a full trial with medical students so I will have to address this issue in a later project – which will incorporate access to a shared university resource with recordings either encrypted or under access only with a university id.*

*For Joanna’s project I can only see that she and I will test the efficacy of matching histograms as proof of concept. The data will only be accessible by Joanna and myself.*

*+one drive*

Q30 a: what do you mean by “users will have access to anonymous recordings”? In the first comment, we have mentioned that recordings are person identifiable,  and how do we protect person’s identity? Why the other users even need to have access to others recordings?

*>>This refers to the practitioners voice recordings – Joanna does not know the people concerned and once we gather the recordings they will be stored under nominal descriptors such as <male, native speaker> or <female, non-native speaker>.*

*+ participants sign off on agreement to use their voice recordings and identifiability.*

*+ labelling should not identify practitioner.*

Q30 b: when you mention “partipicants’ data”, you might need to be very specific: because you collect recordings and questionnaires, what the “participants’ data” is? Do you refer to both?

*>> This refers to users/testers listening to the anonymised recordings and repeating the names of the medical terms or pharmaceuticals. Then the histograms/ frequency plots would be compared. Afterwards Joanna also considered doing a survey. Again, there is probably no time given that we will probably be the only two testers for prototyping.*

*+ the output from Google API is initially stored and compared to the practitioner’s output.*

*+only feedback data from anonymous surveys is retained*

*+user trial metrics may potentially be kept (future version) (but not their voice)*

In the application, we look for the clarification of the following points:

1) what data do you collect?

*>>practitioners send me recordings through whatsapp. I forward to Joanna for storing on her server.*

*Users/testers submit voice recordings. Their Id may have to be anonymised but their voice recordings are not stored past the comparison. Meta data on num.trials, num.correct, num.words may be stored against the user’s anonymous ID. All destroyed post project.*

*+ in initial trials user voice recordings are deleted once comparison with practitioner is completed.*

*+future trials may store num.trials, scores etc but original app does not have this.*

*+comparison is done through Google’s API and (potentially) through frequency analysis.*

2) why do you need to collect these data?

*>>For comparison against the professional recordings for training purposes and for user/tester feedback. Given timescale this will likely be just two testers (Joanna and myself) for PoC.*

*+overview of practitioner and tester, practitioner recordings only stored on one drive. Aim: to allow testers to test their pronunciation of complex pharmaceutical and medical terminology against practitioners.*

3) is there any ethical risk to the data, to the participants? If so, what they are.

*>>Only risk I can perceive is the meta data being stored under an anonymous ID. The app would have to remember/ store logins to match to an ID. But that is another problem for another day as I do not think we have time to do this now.*

*+no risk to data if stored on one drive and is only survey data and practitioner recordings.*

4) how do you address the risk?

*>>Solution is to store on a secure server and delete after a short period. I will only store the original professional voice recordings on university server for future development and there is no associated name to the recordings.*

*+recordings stored on university server. Survey data also stored and anonymised. For project length also stored on student laptop which is password protected.*

*If* you have any questions, both Alice and I would be happy to sit down with you to go through these points, which might make the application quicker.

*If this isn’t feasible then we will consider taking anonymised voice recordings (from the internet) and analysing how comparisons can be made or compare different voices including pitch and accent, for a future medical prototype. Or, if Joanna is allowed to analyse the voice recordings we have we can map complex words to their phoneme so that a future project can use a descriptive phoneme statement as well as the original recording for comparison.*

*Is that acceptable?*

Q: if Joanna records the practitioner words is that acceptable? -ethics for her alone to record needed?

Q: taking recordings from internet – is that acceptable?

Base project: We have student voiced data to compare with users. Worst case: 1 user (me) but expect to use medical/ biological students.

Or.

Use Google API and frequency distribution (or alternative techniques) to compare vocal /audio files.

There could be copyright issues here.

We need to know if voice recordings are acceptable for this project.