To what extent does the system adjust or allow adjustment for individual preferences?

How easy are such adjustments to locate and manipulate?



Will this product be capable of delivering perceived value if the user fails to consistently manually enter data?

If not, what rewards does the user receive for data entry?



Does this product depend non-primary users such as doctors to accept this product?

If so, how have you verified that they will be willing to do so?



Does the product in any way add to user daily workload?

If so, what indications are there that the benefits are sufficient for time invested?



Can the user gain benefits when they use product without having to have invested effort on previous occasions?

If not, how much effort will they need to invest, and why will the user do so?



How much effort per day will users have to invest in order to attain benefits? How is this request for user time justified?

Is this product meant for frequent usage?

If so, can it support user needs without requiring significant cognitive effort?

If this product requires continual use to deliver benefits, how much effort does each use require?

How can this he decreased?



Is this product meant as a daily usage tool?

If so, to what extent do benefits surpass required effort?



How useful for your user is the information presented?

What actual user problem does this information solve?



Does the system offer actionable explicit information? If not, why not?

Could the user be better served by more processed data?



If the system displays significant retrospective data, in what ways does this assist actual user needs?

If less data were visible by default, would the user still be able to complete their task?



Are any extra elements such as sound effects?

Can they be customized or turned off if they are intrusive?

If they add essential information, are there alternate ways for the user to receive this information?



Does the product assist with an actual user need? What is this need? How could it better meet this need?

Can the system offer benefits with a glance from the user?

If not, why not?

Could it?



Can the system offer benefits in a glanceable manner?

How intuitive is such use?



If there are elements such as gamification, are they appropriate to the context of use?

How can this be verified?



Does your product add to daily workload?

If so, what rewards does the user receive to justify time and effort?

Does your device systems allow the user to alter, adjust, or exchange components to meet their needs or preferences? If not, how is this justified?



Concerns CA&U __

Could this system or interface create feelings of stigma or vulnerability in specific situations? e.g. date, job interview, public space, etc.

How could it be made more sensitive?



How does the interface display sensitive or undesired data?

Can it alert user to important situations, without creating undue stress?

Could this be improved?



CEI-02

How does the UI signal to the user non-favorable or undesirable information?

Has the UI been tested with such information, or just ideal values?

How could it be more sensitive to user's vulnerable states?



Are design element colors sensitive to the feelings of the user?

Has the use of alert colors like red been properly tested for emotional reaction from users?



Are the design choices such as color, sounds, and interface motivating or demotivating?

How has this been tested in a way appropriate to intended usage?



Have you adequately researched how the information or feedback you provide impacts your users emotionally?

What strategies do you have in place for delivering data in a way that minimizes undue stress?



How might your product or service create stigma in specific contexts?

How might this stress be lessened?

Is it possible to design to allow the user to discontinue and continue usage in such situations?





Concerns

CEI-

Does the interface help to access or jog users' existing knowledge?

If not, how could this be improved?



If the system offers retrospective information, to what extent does such retrospection serve user needs?

Is this data always needed or just in specific cases?



Could information presented give a false impression of actual data? (For example, graphs that draw lines between data points, or averages that conceal deviation.)



If the user becomes confused by the system, what means are in place to help them understand it?

Does the interface present all information needed for task simultaneously, e.g. a single screen?

Why not?

Could it be changed to allow this to happen?



How much effort is required for the user to interpret the interface?

Could the complexity be reduced without impairing essential functions?

In what ways does this interface prevent the user from making false assumptions about what the data indicates based on their previous experiences (confirmation bias)?



Could this product add to confusion or delays in critical situations, such as with complicated interfaces, distracting, or overly engaging interfaces?

If so, how is this risk justified?



Could users become unnecessarily dependent on this product for decisions? Would it be possible for this product to help the user to learn to not depend on it for decision making?



Does this product support in-the-moment decisions without undue effort?

Does this product help users to correct and adjust their decisions according to specific contextual need?

Does this product help users to access knowledge they already possess in a fluid and flexible manner? How could it do so?



Do interface elements assist users in assessing how their actions could impact outcomes?

If not, could such functionality be integrated?



Does this product assist users in recognizing problems or irregularities?

How does it assist them in understanding the nature of the problem?

How could it do this?



How does this product help users to question, explore, and test their assumptions? Could this process be better supported?

In what ways does this product help users to identify and make sense of patterns?

How could such functionality be included?



In what ways does this product help users to form new ideas about how best to manage challenging situations?



Which aspects of the system are you most concerned about?

What would you change if you could?

Does the proposed system have a system of consent which helps the user to easily control who, when, and for what purpose each of their different data will be used?

If not, how do you justify this?

How could such measures be implemented?



Concerns CC&C-02



Does your business model involve using individual's personal data for targeted marketing or use by 3rd parties?

If so, how do you protect the user from any harms that may result?



Is the information collected by your system visible to any stakeholder other than the primary user? If so, how do vou:

Enable user to pause monitoring in sensitive contexts?

Allow user to control which and how data is shared?



Does your product provide user data to medical personal? If so:

- -what controls does the user have to manage when and which data is visible?
- -could such controls be modified quickly during an appointment to allow review of specific data?



Does your product or service make use of GPS data?

If so, in which ways do you protect the user from:

- -identification
- -linking with medical data
- -vulnerability

How could the user be better protected?



How transparent is the ways in which the user's data is:

- -being used?
- -who has access?

How could you better inform the user?



Why should the user trust your product?

What assurances can you promise?

How can you quarantee they will be followed?



How how much personal information is collected form the user?

Is there an imbalance in data collected and data received?

Is this data only being used to serve the user, or are there other purposes?



Are there any stakeholders that the user is unaware of?

Are they receiving any data, anonymized or otherwise?

Do vou think the user would be less likely to use this product if they were aware of this?



Do you consider the patient the primary stakeholder? If not, how is this justified?





Can the interface help users to react quickly in crucial situations?

If so, in what ways could the system assist in the user becoming more independent?

Does the system try to enforce a structure on the user, such as a set daily time schedule?

If so, how is this justified? Can it be easily customized?



Could this product in any way interfere with user action in critical situations? If so, how could such risks he minimized?

Does this product help users to act quickly in critical situations?

How could it better assist in such instances?



Could this product interfere with the user engaging in necessary actions? If so, how is this justified?





Smartphone



Sensors GPS

Fingerprint
Barometer
Three-axis gyro
Accelerometer
Proximity

Ambient light Camera Compass Notes Monthly costs

Devices Dev-01



Smartwatch



Sensors

GPS

Altimeter Heart rate

Accelerometer Gyroscope Ambient light

WiFi/ LTE

Notes

18 hr. battery life



Pad



Sensors etc.

Camera
Ambient light
Accelerometer
Gyroscope
Compass
Barometer
Fingerprint scanner
WiFi/Blue Tooth

Notes

3G (some models)



Laptop



Sensors etc.

Camera Microphone WiFi/Blue Tooth Notes



Cloud Computing



Notes



Cloud Service



Notes



Cloud Documents



Notes



Cloud



Notes



Dev-08

IoT Health Device





Health Device



Notes



Dev-10

IoT Health Device





Network Data Base



Notes



Dev-12

Desktop Computer





Fitness Band



Notes



Dev-14

LAN Network



NotesWho might have access?



Networked Drive





Local Drive



Notes



Dev-17

Server Farm



Notes



Dev-18

IoT medical device







Notes



Devices

Dev-20

Medical Service





Health Coaching





Clinical Support





Education





Remote Monitoring





Diagnosis





Medical Evaluation





Analytics



Notes



Ser-08

Big Data Analytics





Peer Support











Patient



Age:

Gender:

Needs/ Vulnerabilities:



Family



Age: Duties:

Needs:



Friend



Age:

Gender:

Responsibilities:

Needs:



Parent



Age: Duties:

Needs:



Co-Worker



Duties:

Needs:



Medical Worker



Responsibilities:

Concerns:



Startup



Goals:

Duties:



Com-01

Health Insurer



Goals:

Duties:



Tech Company



Goals:

Duties:



Com-03

Care Provider



Goals:

Duties:



Corporation



Goals:

Duties:



Com-05



Goals:

Duties:



Company

Com-__

Data

Exercise Step counts Blood glucose Behaviors Locations **GPS** Insights Medical Records Sensitive data Advice Sleep Goals Peer support Financial data Alerts Encryption Ads Messages

Data Direction



Data Direction

Attributes

Goals

Habit Change Social Interaction Stress Reduction More Exercise Save Times Coping **Emotional Support** Sell Product Maximize Profit Collect Data Sell Service Improve Health Improve Diet Improve Biomarker Reduce Risk Earn Money Improve Outcomes

Data Direction



Data Direction

Attributes

Actions

Analyze Data Change Goal Exercise Eat/Drink Sleep Pressure Encourage Comment Collect Data Invitate Adapt Algorithm Reflect Exercise Sense Read Control Take Medication

Data Direction



Data Direction

Attributes

Traits

Health Condition **Proprietary** Secure Vulnerable Gender Cognitive Disability illness Learning disability Physical disability

Data Direction



Data Direction

Attributes

Emotions

Fear Anger Sadness Joy Disgust Surprise Trust Anticpation Suspicion Shame Envv Love Worry Concern Vulnerability Stress Calm Humor Hatred



Data Direc<u>tion</u>

Attributes

Atr-05

Data Direction

Responsibilities

Financial **Emotional** Familial Professional Social Monitoring Household Maintenance Management Recording Coordination Facilitation



Data Direction

Attributes

Atr-06

Data Direction

