

Multimedia Appendix 1

App Chronic Disease Checklist v1.0

Q1.1 What is your name?

- Rater 1
- Rater 2
- Rater 3
- Group Consensus
- Dummy Values for Protocol

Q1.2 What is the name of the app you're rating?

Q1.3 On which platform are you using this app?

- iOS
- Android

Q1.4 Which chronic condition does this app address?

- Asthma
- Hypertension
- Mental Health
- Other

ENGAGEMENT

Q2.1 Gamification: Does the app apply gaming principles (such as digital rewards, prizes, leaderboards, badges, aggregated readings or competitions) to engage users?

- No, or not apparent initially (for new users)
- Yes - one/some
- Yes - numerous

Q2.2 Customisation: Does the app allow customisation of features (e.g. sound, content, notifications etc.)?

- No, app does not allow any customisation
- Yes - but limited, e.g. requires resetting each time
- Yes - allows comprehensive customisation

Q2.3 Interactivity: Does the app enable users to enter free-text reflections alongside their clinical data?

- No, or not apparently
- Yes - but limited
- Yes - ample free-text options

Q2.4 Engagement through Use of Plug-ins: Can the app connect with a peripheral device (e.g. via Bluetooth)?

- No, or not apparently
- Yes - but not obvious, or not a key feature of the app
- Yes - obvious and a key feature of the app

Q2.5 Self-Awareness: Does the app encourage the user to develop self-reflection and/or increased self-awareness of the chronic condition?

- No, or not apparently
- Yes - but to a limited extent
- Yes - comprehensively

Q2.6 Positive Behavior Change: Does the app encourage positive self-care practices (lifestyle or behavioural action), e.g. using reminders, tips or social influences?

- No, or not apparently
- Yes - but to a limited extent
- Yes - comprehensively

FUNCTIONALITY

Q3.1 Health Warnings: Does the app provide warnings about, or highlight, out-of-range readings?

- No warnings or highlights provided
- Yes, warnings/highlights provided, but with no guidance/support
- Yes, warnings/highlights provided, with guidance/support

Q3.2 Feedback: Does the app provide tactile, visual and/or sound feedback?

- No tactile, visual and/or sound feedback provided
- Limited tactile, visual and/or sound feedback provided
- Comprehensive tactile, visual and/or sound feedback, with additional controls/features (e.g. on/off, calendar integration)

Q3.3 Structural Navigation: Does the app facilitate sequential/appropriate navigation?

- No, or not apparently
- Yes, but with some deficiencies in functionality/links
- Yes, seamless structural navigation

Q3.4 Intuitive Design: Is the app designed for intuitive use (e.g. identifiable data input fields, intuitive symbols, generous touch areas)?

- No, or not apparently
- Yes, but to a limited extent
- Yes - comprehensively

Q3.5 Connection to Services: Does the app have capacity to send or connect data to another service (e.g. Apple Health)?

- No, or not apparently
- Yes - but to a limited extent (e.g. email data to self only)
- Yes - comprehensively

Q3.6 Performance Power: How fast do the app features (functions) and components (buttons/menus) work?

- Slow or inefficient, times out or crashes
- Reasonably efficient
- Very efficient, additional functionality (e.g. 'loading time' indicator)

EASE OF USE

Q4.1 Holistic Usability: Can all relevant self-management tasks be easily completed in this single app?

- No - not easily; requires another app to record certain/limited instructions
- Yes - but still requires another app
- Yes - all readings can be recorded on this app

Q4.2 Automation: Does the app facilitate automation of tasks, e.g. with pre-populated fields, suggestions based on inputs, management of medical appointments, automated customer service?

- No, or not evidently
- Yes - limited automation evident
- Yes - comprehensive automation evident

Q4.3 Medical and Technological Jargon: Is the app free from confusing (medical and/or technology) jargon?

- No - jargon evident
- Yes - mostly consumer-friendly terminology
- Yes - consumer-friendly terminology throughout

Q4.4 User Profile Setup: Does the app provide easy setup of a user profile, e.g. option to login via social media account?

- No, app operates without user profile or registration upon download
- Yes - limited user profile setup present
- Yes - easy, guided, comprehensive profile; social media login provided

Q4.5 Offline mode: Does the app operate in offline mode?

- No - app does not operate in offline mode
- Yes - but limited offline functionality
- Yes - comprehensive features available in offline mode; syncs when back online

Q4.6 Reminders: Does the app enable users to set reminders?

- No, or not apparently
- Yes - basic reminders can be set
- Yes - advanced reminders can be set, e.g. synced with external calendar, integrated with SMS

INFORMATION MANAGEMENT

Q5.1 Statistics: Does the app enable analysis of clinical data (e.g. produces statistics, graphs)?

- No, or not apparently
- Yes - but limited analysis
- Yes - comprehensive statistics available; can be exported for further analysis

Q5.2 Privacy and data security: Does the app allow secure data input and export (e.g. password management, encryption, privacy statement, cloud backup)?

- No, or not apparently
- Yes - basic security/privacy features
- Yes - comprehensive security/privacy features

Q5.3 Quality and Accurate Information: Does the app accept and display correct, relevant information regarding the chronic condition?

- No, or not apparently
- Yes - but with some limitations, e.g. does not detect out-of-range values entered
- Yes - comprehensive controls over data entry; entered data consistent with displayed outputs

Q5.4 Quantity of information: Is health information offered by the app concise but still comprehensive?

- No, too minimal or overwhelming
- Yes - but gaps or unnecessary detail present
- Yes - offers concise but comprehensive information

Q5.5 Visual information: Is visual explanation of concepts – through charts, graphs, images, videos etc – clear, logical and correct?

- No - unclear, illogical or incorrect visual information
- Yes - but sometimes unclear, illogical or incorrect
- Yes - clear, logical and correct

Q5.6 Credibility: Is the app developer/producer credible, e.g. uses a recognised logo or cites research?

- No, or not apparently, e.g. no credentials displayed
- Yes - credentials displayed
- Yes - comprehensive credentials displayed; cites research