System Requirement

Specification

for

**BISSON HEALTH**

**DISEASE RESOURCE CENTRE**

# Expected Deliverables

The following Deliverables are expected to be produced after successful completion of the project:

* Bisson Health Disease Resource Centre (DRC) – Web Version
* Bisson Health Disease Resource Centre (DRC) – Mobile App Version (iOS, Android)
* Bisson Health – Mobile App Version (iOS, Android)

A diagram showing the possible modules required for:

1. Bisson Health Disease Resource Centre
2. Bisson Health Disease Resource Centre (Hidden Interface)
3. Bisson Health App

These modules have been colour coded to represent three phases of development:

* Phase 1 (Green) – Development of base modules for patient and device data management
* Phase 1.5 (Red) – Development of base modules for professional and device data management
* Phase 2 (Blue) – Development of advanced modules for professional users and patient support

Diagram

Description automatically generated

A picture containing chart

Description automatically generated

Diagram

Description automatically generated

# BISSON HEALTH APP (Mobile Version for patients)

|  |  |  |
| --- | --- | --- |
|  | | |
| **Module** | **User Needs** | **Functionalities** |
| Login  register | Register for an account | * Select country * Enter mobile phone number * Accept terms and conditions * System sends out SMS verification code * Enter SMS verification code * Enter name, gender, DOB * Register |
| Login using mobile number | * Select country * Enter mobile phone number * Accept terms and conditions * System sends out SMS verification code * Enter SMS verification code * Login |
| Device pairing | Manage Bluetooth devices | * View all paired devices * Add and search a Bluetooth device * Pair a Bluetooth meter * Accept Bluetooth device pairing request * Sync a Bluetooth meter with APP * Unpair a Bluetooth meter * Remove a Bluetooth meter |
| Health data entry  [BG: Blood Glucose]  [BP: Blood Pressure] | Enter health data manually | * Add BG data   + BG level mmol/L   + Date and time   + Period: Wake up, Before Breakfast, After Breakfast, Before Lunch, After Lunch, Before Dinner, After Dinner, Bedtime, Midnight * Add Note:   + Photo (Camera, Library)   + Carb intake (g)   + Insulin dose (Rapid acting, Long Acting, Premix, Immediate Acting)   + Exercise duration: Yoga, Walking, Cycling, Lifting, Swimming, Jogging, Aerobic (hr: min) |
| * Add BP data:   + Systolic blood pressure (mmHg)   + Diastolic blood pressure (mmHg)   + Pulse (bpm)   + Date and time |
| Auto sync new health data | * Tap to sync BG device to App:   + Display BG level mmol/L, Date and time, Period   + Check option: Edit Period, Add note   + \*Cannot delete BG reading |
| * Tap to sync BP device to App:   + Display SBP/DBP (mmHg), Pulse, Date and time   + Retest, save   + \*Cannot delete BP reading |
| Dashboard | View diabetes summary statistics | * View BG summary statistics:   + 7-, 14-, 30- and 90-day records   + Percentages of Hypo, Good, Hyper events   + Between periods records     (\*percentages of hypo, good and hyper levels and average glucose level are calculated using readings taken over the past 7,-, 14-, 30- and 90 days; the bar charts further categorized the percentages and average BG levels by period) |
| Data analytics | Manage BG records in different formats | * Display BG records:   + List view   + Between-meals view * Edit period of a BG record * Edit / add note to a BG record * Display average glucose level   + Indicate Hyperglycaemic event   + Indicate Hypoglycaemic event |
| View HbA1c records | * Display HbA1c record (%)   + HbA1c > 7% (critical) * Date and time |
| View BP records | * Display average SBP/DBP (mmHg) * Display average pulse (bpm) * Display BP historical records   + Date and time |
| Profile | Manage personal details | * Edit profile:   + Photo   + Mobile Number (change and verify)   + Name   + DOB   + Gender   + Height (ft.in/cm)   + Weight (lbs/kg)   + Unit of Measurement (English/Metric) * Display QR code (for Identification) * View connections with CARE Team (Added by Admin only) |
| Manage BG Goal Range | * Select diabetes type * Set BG Goal Range (\*will affect glucose statistics calculation)   + Before meal   + 2 hrs after meal   + Bedtime * Set HbA1c level (%) * Display measurement unit |
| Manage Daily Testing Schedule | * Plan weekly testing schedule:   + Day: Monday – Sunday   + Period: Wake up, Breakfast, Lunch, Dinner, Bedtime * Activate / deactivate testing reminder   + Wake up, Before Meal, After Meal, Bedtime |
| Support (Messenger) | Manage communications with CARE Teams | * Authorize a CARE Team   + Choose a CARE Team   + System sends out SMS verification code   + Enter SMS verification code   + Authorize * Message a CARE Team that they have been assigned to by professionals * View chat history with a CARE Team * Deauthorize a CARE Team   + Choose a CARE Team   + System sends out SMS verification code   + Enter SMS verification code   + Deauthorize |
| Tutorial | View tutorials | * View tutorial about the App and Bluetooth devices   + Text, image, video   + Content of tutorials |
| Support (Guide) | View guide | * Built-in guide for   + Information about the App   + FAQ   + View health topics |
| Device registration | Register Device | * Register Meter * Select “Place of Purchase” * Scan store QR code for warranty registration * Confirm store of purchase and select “Register Now” * Display Warranty information   + Product name   + Serial number   + Date of product warranty |

# BISSON HEALTH DRC (Web Version for Professionals)

|  |  |  |
| --- | --- | --- |
| **Module** | **User Needs** | **Functionalities** |
| Login Register | Register for an account | * For Hospital Admin, Professionals   + Get Unit code, approved ID and default password from Sales team * For Admin, Regional Admin   + \*Email |
| Login an account | * For Hospital Admin, Professionals   + Enter Unit ID and Password * For Admin, Regional Admin   + \*Email |
| Manage Patient | Manage Patient Account | * Create new patient account (not registered via App):   + Name   + Gender   + DOB   + Unit ID and password   + Diabetes type   + Patient no   + Advanced information (Date of diagnosis, Practice group, Mobile phone number, Attending physician, HealthCare provider) * Add patient registered via App   + Enter mobile phone number   + Check for duplicate account   + Merge duplicate account (Name, Gender, Birthday, Phone number, 3 identical attributes)   + Add patient as member   + System sends out SMS verification code   + Enter SMS verification code   + Approve authorization |
| Overall Patient | View all patients and monitor patient blood glucose levels | * View all patients   + Ordered by the latest measurement upload time (cannot be deleted)   + Ordered by recent communication   + Indicate number of unread messages from patients   + Display summarised patient info: Name, Age, Mobile number, Practice Group, last health data upload time   + Select a patient to enter blood glucose monitoring page |
| Patient Monitoring | Monitor patient blood glucose levels | * Three tabs: Log book, health data, remark, about patient * Log Book (Statistics, Charts, List)   + Glucose Summary Pattern   + Smart Log Book   + Daily Glucose Pattern   + Daily Period Glucose Variation   + Display estimated and real HbA1c   A computer screen capture  Description automatically generated with low confidence           * Health Data   + Configure health data   + Add Health data (Date, Weight, BP, HbA1c, CHO, TG, LDL, HDL, eGFR, CRE, PRO)   + Only display HbA1c in Mobile Health App * Remark   + Write notes about patient information and medicine record * About Patient   + Set patient’s personal BG target range: AC, PC, Bedtime, HbA1c)   + Testing plan |
| Critical Event | Manage Hyper and Hypo events | * General BG target range   + Set / modify target range   + View historical records: 1-, 3-, 7-, 14-day   + Display summarised patient info   + Sort patients by period   + Sort patients by Hyper / Hypo percentage (%) |
| * Patient’s personal target range   + Set / modify target range   + View historical records: 1-, 3-, 7-, 14-day   + Display summarised patient info   + Sort patients by period   + Sort patients by Hyper / Hypo percentage (%) |
| Manage Device | Collect BG Data from Patient’s meter | * Collect data from patient’s meter (for BG only?)   + Search meter   + Pair meter   + Collect data |
| Manage Medication | Manage patient’s medication history | * Add, edit, and view patient’s medication history   + Active medication (oral, injectable)   + Medication schedule   + Important notes   + Medical history/records (EMR) |
| Tutorial | View tutorials  (for professionals) | * View tutorial about the App and Bluetooth devices   + Text, image, video   + Content of tutorials? |
| Report | Generate statistics reports | * Generate statistics reports (PDF, CVS)   + List of patients   + List of devices   + List of hypo/hyper events   + Etc. |
| Practice Group | Manage patients by practice group | * + - Create new practice group       * + Title         + Subtitle (optional)         + Set critical glucose range: dangerously high, dangerously low in mg/DL       * Select add, or remove patients from a practice group       * Select, add, or remove staff from a practice group     - Display practice group information       * + Title, subtitle, number of professionals and patients in the group, average BG level, number/percentage of patients that happen with hypo and hyper glucose in a day       * Manage patients in a practice group         + Assign a number to each patient         + Display patient information (Name, Age, Phone number, join date, BG level)         + Display BG range of patients (Dangerously low or dangerously high based on personal target range)   BG level over/below personal target range (display in red/blue background)  Default setting <70 Dangerously low, >250 Dangerously high     * + - * Edit practice group information       * Delete a practice group       * Generate report for selected patients and selected time range (PDF, Excel, CSV) |
| Manage User | Manage professional account | * Create professional account   + Enter name   + Select gender   + Select country   + Enter mobile phone number   + Enter Login ID and password   + Select Type of Profession * Edit personal information * Edit working group (=practice group?) information      * Set to receive emergency SMS when patient’s reading is below or over the range​ |
| Roles & Permissions | Manage roles and permissions | * Add roles   + System Admin   + Regional Admin   + Hospital Admin   + Professional * Add, edit or delete permissions |
| Appointment | Manage appointment with patients? | * Display number of patients waiting to see doctor after “POCT” testing * **Doc2us (appointment, e-prescription)** |
| Communication | Manage recent communication with patients | * Badges to indicate unread **messages** * View recent messages in chat room * Badges to indicate unread **notes** * View recent notes (photo carbohydrate, exercise records) uploaded by patients |
| Coaching | Educating professionals? |  |
| POC Settings |  | * Location setting * Meter setting * Reagent setting * QC setting * Remark setting * Meter status * POC Settings |
| Dispatch Management |  | * Medical Order (Exchange) * Test Record * Approve Test Results |
| Report Management |  | * Data report * Personal Data Report * QC Report * Meter Error Report |

# BISSON HEALTH DRC (Mobile Version for Professionals)

|  |  |  |
| --- | --- | --- |
|  | | |
| **Module** | **User Needs** | **Functionalities** |
| Login | Log in an account | * Hospital admin   + Enter Unit ID and password, or   + Scan QR code * Medical professional   + Enter Unit ID and password, or   + Scan QR code |
| Patient List management | Overall patients | * View all patients   + List view   + Grid view * Search Patient   + Enter patient name, or   + Scan QR code |
| Manage patient account | * Create new patient account   + Enter Name, Patient number (ID), DOB, Gender, Type of diabetes, Mobile Number, Care Area, Year diagnosed, Emergency contact   + Create account |
| Manage patient profile | * Edit patient personal information   + Name, DOB, Gender, Mobile number, * Set patient’s personal target range   + Type of diabetes, HbA1c (%), AC, PC, Bedtime (mg/dL) * Display connected Practice Group & professionals * Add & remove Bluetooth devices |
| Patient monitoring | * View BG summary statistics:   + Readings in list view or form view   + 7-, 14-, 30- and 90-day records   + Percentage of Hypo, Good, Hyper events   + Between periods records   + Average BG level   + Display estimated and real HbA1c * View Biomarkers records:   + Date, Time, Weight, BP, HbA1c, CHO, TG, LDL, HDL, eGFR, CRE, PRO) * Remark   + View / Write notes about patient information and medicine record |
|  | Collect Health Data | * Enter Biomarkers manually   + Date, Time, Weight, BP, HbA1c, CHO, TG, LDL, HDL, eGFR, CRE, PRO) * Collect data from patient’s meter   + Search meter   + Select paired meter   + Sync data |