

03_01_StepandData_ToBe

Table with columns: Availability of data, Number in Table & Data Volume, Data Category, Data Points, Location (Please note that following 'Digital Health App' data source has to be saved in Health Bank), Note, Data Source, From Who, and To Be Journey (Step1 to Step10). The table contains various data points related to patient health, app usage, and household information, with corresponding data sources and collection methods.

Static = means taken once
Dynamic = means taken several times a year

Legend table with two columns: Data Source and Status. Status options include MUST (Primary), Secondary, and N/A.



03.02. Step and Function list (App Feature Level)

Steps	Journey	Function	Description	Column1	Use-case Application	Fit or Gap compare (YES = O, No = X)	Fit or Gap compare Details (If it's a Gap, please check how you plan to develop)	Fit screen image if applicable (if existing app already has the feature)
Step2	APP REGISTRATION (BY HEALTHCARE STAFF)	Registration	User takes photo of citizen's ID Card and enter registration attributes on behalf of the citizen. The OCR Reader prefills information to the registration, and system verifies if the information matches to the National Digital ID Platform.	ID MR ID Full Name Sex/Gender Date of Birth Mobile Phone number Address (Residence/Current)	Usecase A			
Step2	APP REGISTRATION (BY HEALTHCARE STAFF)	Identity Verification	For security purposes, user will have to take photo of the citizen to verify the citizen's identity: if they have the facial recognition matches the current photo with the photo in the National Digital ID Platform.	Input Verification ID Card Front & Back User's Photo	Usecase A			
Step2	APP REGISTRATION (BY HEALTHCARE STAFF)	T&C (Opt-in Consent)	Note: In charge of the consent management and forms will be designed and created under DHP by NGN. However, as its important aspect for citizen, as well as to maintain the design of User Interface(UI) and User Experience(UX) of the usability of the application, please provide the design image on the proposal. Upon registration, user reads through Terms & Condition for the citizen, and applies for opt-in consent for different purposes based on citizen's choices. Its an Opt-in Consent for "Primary usage (required)" and "secondary usage (optional), and check the "Terms & Conditions consent". Primary so that its for medical professionals and secondary is agrigated and masked but used for future research.	Consent Management	Usecase A			
Step2	APP REGISTRATION (BY HEALTHCARE STAFF)	Menu	Users can help citizens without an app enter basic profile (weight, height), and do initial surveys to assess behaviors and health risks. This will be later on useful for other medical staff to assess in the initial health screenings.	Current Disease (Diagnosis) Current Disease (Diagnosis) HealthStatus / Prescription Family History Weight (Static) Height (Static) Weight (Dynamic) Height (Dynamic) Weight (Dynamic) Height (Dynamic) MR (Static) MR (Dynamic)	Usecase A			
Step2	APP REGISTRATION (BY HEALTHCARE STAFF)	Registration Completion	Once everything is completed, a Bar code will be generated. User can save, share, or print out Bar code to be given to the citizen. Citizen can show this bar code for future screenings, which acts as a digital health book. (Bar code using in ePIS will be there instead of QR code)	Output - Number of registered app users (to health workers)	Usecase A			
Step2	APP REGISTRATION FLOW (SELF-REGISTRATION)	Registration	User takes photo of ID Card and enter registration attributes. The OCR Reader prefills information to the registration, and system verifies if the information matches to the National Digital ID Platform. If it is correct, user can go through the next flow.	ID MR ID Full Name Sex/Gender Date of Birth Mobile Phone number Address (Residence/Current)	Usecase A			
Step2	APP REGISTRATION FLOW (SELF-REGISTRATION)	Identity Verification	For security purposes, user will have to take photo to verify their identity. The AI facial recognition matches the current photo with the photo in the National Digital ID Platform.	Input Verification ID Card Front & Back User's Photo	Usecase A			
Step2	APP REGISTRATION FLOW (SELF-REGISTRATION)	T&C(Opt-in Consent)	Note: In charge of the consent management and forms will be designed and created under DHP by NGN. However, as its important aspect for citizen, as well as to maintain the design of User Interface(UI) and User Experience(UX) of the usability of the application, please provide the design image on the proposal. Upon registration, user reads through Terms & Condition, and applies for opt-in consent for different purposes. Users will be able to click register once the required fields are checked. Its an Opt-in Consent for "Primary usage (required)" and "secondary usage (optional), and check the "Terms & Conditions consent". Primary so that its for medical professionals and secondary is agrigated and masked but used for future research.	Consent Management	Usecase A			
Step2	APP REGISTRATION FLOW (SELF-REGISTRATION)	Registration completion	After registration process is completed, user will be redirected to first-time log-in screen.	Output - Number of registered app users (to health workers)	Usecase A			
Step2	APP REGISTRATION FLOW (SELF-REGISTRATION)	Login (first time)	For first-time log-in, users will have to enter their phone number and receives OTP via SMS for verification for security. The system remembers user log-in and the next time they log in, only PIN will be required to access the app.	Input Login Attributes Phone Number OTP via SMS Password / PIN	Usecase A			
Step2	APP REGISTRATION FLOW (SELF-REGISTRATION)	Menu	First time users will be asked to enter their basic health profile as an initial data.		Usecase A			
Step2	APP REGISTRATION FLOW (SELF-REGISTRATION)	Health information input	Users can initially enter basic profile (weight, height), and do different surveys to self-assess health risk. This will be later on useful for medical staff to assess in the initial health screenings.	Current Disease (Diagnosis) Current Disease (Diagnosis) HealthStatus / Prescription Family History Weight (Static) Height (Static) Weight (Dynamic) Height (Dynamic) Weight (Dynamic) Height (Dynamic) MR (Static) MR (Dynamic)	Usecase A		Need development	
Step 3	INITIAL SCREENING	Patient finder	User enters one of the attributes to find the patient info within the database. If the patient is not registered, user adds new patient. The information which needs to be input will be the same as the input Registration Attributes (except for PIN where citizens will input it themselves in the app).	ID MR ID Consent Management Full Name Sex/Gender Date of Birth Mobile Phone number Address (Residence/Current)	Usecase A, C			
Step 3	INITIAL SCREENING	Patient health record	User clicks on the patient info. The patient's health data retrieved from the Health Bank will be shown. Unverified data are self-assessed data that were input by the patient themselves which may need further verification from the user via Manage Info Feature	Output Health Bank data CVD Risk (Dynamic)	Usecase A			
Step 3	INITIAL SCREENING	Manage Patient's info	User can add or edit health info and also verify patient's self-assessed info in this feature. User will not be able to edit field fields such as National Digital ID, name, age, Date of Birth, Sex. User can also add vitals of the patient through syncing of IoT health device such as Blood Pressure monitor, heart rate variability (HRV) sensors	Consent Management Family History	Usecase A, C			
Step 3	INITIAL SCREENING	Sync Vitals Data	User can input vital records from the medical health device synced via Bluetooth / network or manually add the vital records when there are no available signals.	Weight (Static) Weight (Dynamic) Height (Static) Height (Dynamic) Weight (Dynamic) Height (Dynamic) MR (Static) MR (Dynamic) Blood Pressure (Dynamic)(mmHg) (Static) Blood Pressure (Dynamic)(mmHg) (Dynamic) Heart Rate (Dynamic)	Usecase A, C			
Step 3	INITIAL SCREENING	Risk Info	If there is enough information inputs, the system can analyze patient's risk based on system's pre-programmed WHO PEN Protocols. Users (Healthcare Staff) can use this findings to give initial screenings, referral recommendations, and lifestyle changes to the patient.	Output - CVD Risk Level (Dynamic) Daily Active users (linked to the health workers) Current Disease (Diagnosis) Current Disease (Diagnosis) Blood test result (CVD, Cholesterol) Blood test result (Cholesterol < 1.5 mmol/L, or >= 1.90 mmol/L) Blood test result (Triglycerides < 1.5 mmol/L) Blood test result (Blood Sugar Fasting & Control Rate) Blood test result (Blood Glucose level) Blood test result (HbA1c) Blood test result (Cholesterol)	Usecase A,C			
Step 4	WEARABLE IOT HEALTH DEVICE	Main Menu	User can sync data from IoT Wearables (e.g. Smartwatch) to the application through feature in Settings. (Assumption: IoT Device will be managed by third-party; Health App will only sync the data from IoT.)		Usecase A, C			
Step 4	WEARABLE IOT HEALTH DEVICE	Settings	In the settings menu, user can click on sync data from wearable to sync data.		Usecase A,C			
Step 4	WEARABLE IOT HEALTH DEVICE	Manage Linked Device	User can add applications or device found to sync health data to the mobile application. Once user toggles on the button, the wearable device data will be synced to the app, which will also be synced to Health Bank.	Full Name Sex/Gender Date of Birth Weight (Static) Height (Static) Weight (Dynamic) Height (Dynamic) Weight (Dynamic) Height (Dynamic) MR (Static) MR (Dynamic) Step Count Physical Activity Calorie Sleeping Hours (Dynamic)	Usecase A,C			
Step 4	WEARABLE IOT HEALTH DEVICE	Check Synced Data	User can check synced data within the application. They can also set health goals and add their daily nutrition. User can share the progress with the social community.	Output - Heart Rate (Dynamic), Step Count, Physical Activity, Calorie, Sleeping Hours (Static)	Usecase A, C			
Step 4	WEARABLE IOT HEALTH DEVICE	Add Data Manually	For users without IoT Device, they can still participate by logging the health status manually in the app.	Input - Step Count, Physical Activity	Use case A, C			
Step 4	WEARABLE IOT HEALTH DEVICE	Achieve goals	User will receive notifications that will remind the user based on the health goals set.	Output - Heart Rate (Dynamic), Step Count, Sleeping Hours, Physical Activity	Use case C			
Step 5	SUPPORT FROM ONLINE COMMUNITIES	Main Menu	Within the main menu, user can select a feature where they can interact with other online community members within the health application		Use case B			
Step 5	SUPPORT FROM ONLINE COMMUNITIES	Create user profile	For anonymity, user can create their own user profile, and select health goals that they want to achieve. They will also be recommended the goals based on their health data and health risk. Each group of health data goal could be max of 5 people and if they don't update their progress for 5 days they automatically are log-off from the group. User can also create their own group.	Full Name (Anonymized) Physical activity Calorie Sleeping Hours (Dynamic) Physical activity self-assessment (Physical Activity Assessment) Health self-assessment (Health Assessment) Cognitive self-assessment (Cognitive) National self-assessment (Salt Intake, vegetable intake, and Dairy Part consumption) (Health Assessment) (Static)	Use case B			

	SUPPORT FROM ONLINE COMMUNITIES	Join community group	After choosing health goals, user will be recommended / related groups, and chat with people who have the same health goals anonymously		Usecase B			
	SUPPORT FROM ONLINE COMMUNITIES	Share health data	User can click to share health data and progress within the group chat, which allows community to gain recognition and motivation		Usecase B,C			
	SUPPORT FROM ONLINE COMMUNITIES	Government news & Survey	Government can also share health-related news within the community group chat. Also, if there are survey that needs to be taken for government related to health.		Usecase B, C			
Step 6	CONVENIENCE OF HOSPITAL VISITS	Patient Finder	When patients visit hospital for diagnosis, user (health care staff) can gain extensive data by searching patient data in the database. User enters one of the patient attributes to find the patient info within the database.	ID MR ID Full Name Sex/Gender Date of Birth Mobile Phone number Address (Permanent)	Usecase C,D			
Step 6	CONVENIENCE OF HOSPITAL VISITS	Patient Health Records	User clicks on the patient info. The patient's health data retrieved from the Health Bank will be shown. User can check patient health data as a supplementary data for diagnosis along with information in ePIS (this will be connected through ePIS).	Current Management Current Disease (Diagnosis) Current Disease (Diagnosis) Medication / Prescription Family History Weight (Static) Height (Static) Height (Dynamic) Height (Dynamic) BMI (Static) BMI (Dynamic) Blood Pressure (Systolic/Diastolic) (Static) Blood Pressure (Systolic/Diastolic) (Dynamic)	Usecase A,C,D			
Step 6	CONVENIENCE OF HOSPITAL VISITS	Behaviour and lifestyle records	Data from all sources (Health Bank, Medical Bank, Household Bank, BioBank) will be consolidated into the National Data Hub which is a centralized data stored for government to analyse health trends. Through use of enterprise data platform, users can manage	Current Management Current Disease (Diagnosis) Current Disease (Diagnosis) Medication / Prescription Family History Weight (Static) Height (Static) Height (Dynamic) Height (Dynamic) BMI (Static) BMI (Dynamic) Blood Pressure (Systolic/Diastolic) (Static) Blood Pressure (Systolic/Diastolic) (Dynamic)	Usecase A,C,D			
Step 6	CONVENIENCE OF HOSPITAL VISITS	Family and household history records	User can also dig down further to see family and household history records that was input during previous NCD screenings, government initiatives, or manually input by patient. This is to assess their background as well as proximity to high-risk environment / areas.	Physical activity self-assessment (Physical Activity Assessment) Mental self-assessment (Mental Assessment) Lifestyle self-assessment (Lifestyle) Nutritional self-assessment (Self intake, vegetable intake, and Omega Fatty consumption) (Nutrition Assessment) (Diet) Nutritional self-assessment (Self intake, vegetable intake, and Omega Fatty consumption) (Nutrition Assessment) (Salt) Nutritional self-assessment (Self intake, vegetable intake, and Omega Fatty consumption) (Nutrition Assessment) (Sugars) Dynamic Household Bank assessment (DHB-1: Health Bank) Dynamic Household Bank assessment (DHB-2: Community Vitality) Dynamic Household Bank assessment (DHB-3: Psychological Wellbeing) Dynamic Household Bank assessment (DHB-4: Healthy Diet) Dynamic Household Bank assessment (DHB-5: Health Assessment) Healthy Conditions Living environment Disasters to medical facilities Home lead	Usecase A,C,D			
Step 6	CONVENIENCE OF HOSPITAL VISITS	Data links to apps	After user updates diagnosis within ePIS, ePIS data will also be reflected on user's profile within the mobile application in real time (the data flowing back to ePIS). Here, both citizens and health workers can also see summarized treatment information (Not the actual medical record)	Diagnos CD MR ID Current Management Risk Factors (DHB) Full Name Sex/Gender Date of Birth Mobile Phone number Address (Permanent) Current Management Current Disease (Diagnosis) Medication / Prescription Family History Weight (Static) Height (Static) Height (Dynamic) Height (Dynamic) BMI (Static) BMI (Dynamic) Blood Pressure (Systolic/Diastolic) (Static) Blood Pressure (Systolic/Diastolic) (Dynamic)	Usecase C			
Step 7	DNA TO BIOBANK	Patient Finder	In cases where patient's data will have to be sent to BioBank for further diagnosis, the data will also be updated to the health application. User enters one of the patient attributes to find the patient info within the database.	ID MR ID Full Name Sex/Gender Date of Birth Mobile Phone number Address (Permanent) Current Management Current Disease (Diagnosis) Medication/Prescription Family History Weight (Static) Height (Static) Height (Dynamic) Height (Dynamic) BMI (Static) BMI (Dynamic) Blood Pressure (Systolic/Diastolic) (Static) Blood Pressure (Systolic/Diastolic) (Dynamic) Blood Pressure (Systolic/Diastolic) (Static) Blood Pressure (Systolic/Diastolic) (Dynamic) Blood test result (LDL Cholesterol) Blood test result (HDL Cholesterol) or >= 100 mg/dL Blood test result (Triglyceride) < 150 mg/dL Blood test result (Blood Sugar Fasting & Control Rate) Blood test result (Blood Sugar)	Usecase C			
Step 7	DNA TO BIOBANK	Patient Health Records	User clicks on the patient info. The patient's genetic-related data is retrieved from BioBank to be displayed here.	HCA Genotype Lifestyle Components Family History Home lead	Usecase C			
Step 7	DNA TO BIOBANK	Patient Health Records	User can check genetic-related data, along with other health data and risk assessments to give personalized treatment that is targeted towards the patient.	Diagnos CD MR ID Current Management Risk Factors (DHB) Full Name Sex/Gender Date of Birth Mobile Phone number Address (Permanent) Current Management Current Disease (Diagnosis) Medication / Prescription Family History Weight (Static) Height (Static) Height (Dynamic) Height (Dynamic) BMI (Static) BMI (Dynamic) Blood Pressure (Systolic/Diastolic) (Static) Blood Pressure (Systolic/Diastolic) (Dynamic) Blood Pressure (Systolic/Diastolic) (Static) Blood Pressure (Systolic/Diastolic) (Dynamic) Blood test result (LDL Cholesterol) Blood test result (HDL Cholesterol) or >= 100 mg/dL Blood test result (Triglyceride) < 150 mg/dL Blood test result (Blood Sugar Fasting & Control Rate) Blood test result (Blood Sugar)	Usecase C			
Step 8	TELEMEDICINE FOLLOW UP		This one, ePIS is planning to cover the telemedicine so function will be follow up	ID MR ID Full Name Sex/Gender Date of Birth Mobile Phone number Address (Permanent) Current Management Current Disease (Diagnosis) Medication / Prescription Family History Weight (Static) Height (Static) Height (Dynamic) Height (Dynamic) BMI (Static) BMI (Dynamic) Blood Pressure (Systolic/Diastolic) (Static) Blood Pressure (Systolic/Diastolic) (Dynamic)	Usecase D			
Step 8	TELEMEDICINE FOLLOW UP	Schedule Telemedicine Appointment	Within the telemedicine feature, user can contact hospitals directly and vice versa for non-emergency consultations. User can schedule an appointment with doctor.	Out of scope	Usecase D		PNV	
Step 8	TELEMEDICINE FOLLOW UP	Input Telemedicine Data	User can schedule a call by inputting the information. The availability of the doctor is calculated based on location proximity, and user's treatment history. User can also select communication preference with the Social Media Account that is linked to the device.	Out of scope	Usecase D		PNV	
Step 8	TELEMEDICINE FOLLOW UP	Tele-consultation with Doctor	The request information will be sent to the doctor. Notification will be sent to the user once the doctor accept the tele-consult appointment. Once appointment is accepted, user can consult with the doctor on the scheduled date. This part is plan to be covered by ePIS	Out of scope	Usecase D		PNV	
Step 8	TELEMEDICINE FOLLOW UP	Receive Diagnosis & Prescription	After completing the telemedicine consultation, user receives diagnosis from the doctor. Doctor can recommend user to come in for further extensive health checks. Or if it is a follow-up case, doctor can update the prescribed medicine to the user that they can receive at the nearest PHC.	Out of scope	Usecase D		PNV	
Step 8	TELEMEDICINE FOLLOW UP	Updated Prescription	Within 'My Prescription', user can check the prescribed medicine and can go to the local PHC to obtain the medication. Reminder to take the medication and pickup medication is necessary. It will be good to be able to follow up on "who is treated/control" patients and who is not	Out of scope	Usecase D		PNV	
Step 9	CENTRALIZED DATA FOR EBPM	Healthcare analytics dashboard	Data from all sources (Health Bank, Medical Bank, Household Bank, BioBank) will be consolidated into the National Data Hub which is a centralized data stored for government to analyse health trends. Through use of enterprise data platform, users can manage data, analyze, and share across different departments.	ID Current Management Number of registered users Risk Factor (DHB) Location Date of Birth Address (Permanent) Address (Residence/Current) Current Management Current Disease (Diagnosis) Current Disease (Diagnosis) Medication / Prescription Family History Weight (Static) Height (Static) Height (Dynamic) Height (Dynamic) BMI (Static) BMI (Dynamic) Blood Pressure (Systolic/Diastolic) (Static) Blood Pressure (Systolic/Diastolic) (Dynamic) LDL Risk Level (Dynamic) Lifestyle self-assessment (Lifestyle) Nutritional self-assessment (Self intake, vegetable intake, and Omega Fatty consumption) (Nutrition Assessment) (Diet) Nutritional self-assessment (Self intake, vegetable intake, and Omega Fatty consumption) (Nutrition Assessment) (Salt) Nutritional self-assessment (Self intake, vegetable intake, and Omega Fatty consumption) (Nutrition Assessment) (Sugars) Dynamic Household Bank assessment (DHB-1: Health Bank) Dynamic Household Bank assessment (DHB-2: Community Vitality) Dynamic Household Bank assessment (DHB-3: Psychological Wellbeing) Dynamic Household Bank assessment (DHB-4: Healthy Diet) Dynamic Household Bank assessment (DHB-5: Health Assessment) Healthy Conditions Living environment Disasters to medical facilities Home lead	Usecase C			
Step 9	CENTRALIZED DATA FOR EBPM	Survey	Government can ask for quick survey to the citizen (very simple form)	Questions on 'Household (Dynamic) Push notice QAC' such as... Dynamic Household Bank assessment (DHB-1: Health Bank) Dynamic Household Bank assessment (DHB-2: Community Vitality) Dynamic Household Bank assessment (DHB-3: Psychological Wellbeing) Dynamic Household Bank assessment (DHB-4: Healthy Diet) Dynamic Household Bank assessment (DHB-5: Health Assessment)	Usecase C			
Step 9	CENTRALIZED DATA FOR EBPM	Manual report is filed	1. Percentage of target population agree to the secondary use of data should be reported. 2. Number of users enrolled should be calculated and reported. 3. DAU and percentage of users access to the health App on a regular basis should be reported and reported. 4. Highly appreciated if CVD risk is calculated same with the MCH's annual Health survey from age, sex, SBP, current smoking status, and BMI.	Current Management Number of registered app users Risk Factor (DHB) CVD Risk Level (Dynamic)	Usecase C			