**Smart health Application**

**Clinicians Operation steps** V1.2

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Clinician App Usage Step by Step:

1) To see how the app works properly, use one phone with the clinician password and another one with patient password.

2) Login to the app on a different phone by the pausing username: info@e-halalworld.com and password: Xyz12345!!

3) The image below show the first screen you will see after login, we created the user profile for clinician named Dr. Ayman and we added a patient called Naglaa (a real patient). Steps from 4 to 8 are optional and will be only needed if you a registering for a new user profile.
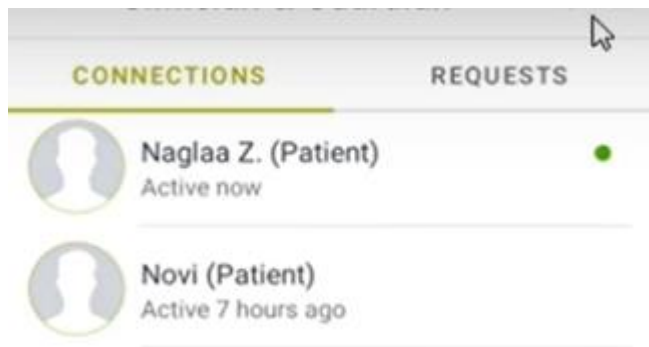

4) [Optional] To connect to patients use the search icon on the upper right corner of the screen after the login to search and add patients to monitor. The username provided already have a patient added

5) [Optional] Key-in "N" in the search bar on the top of the screen, see the image below.
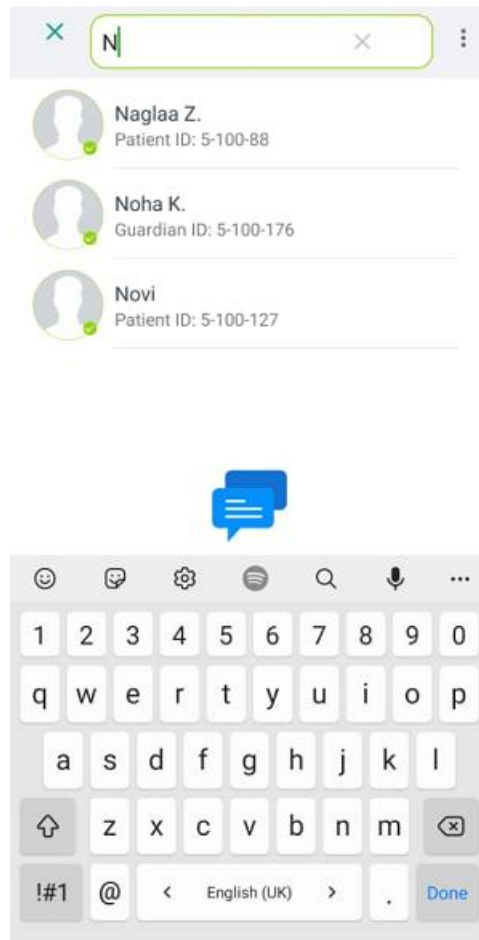
6) [Optional] Click on the patient "Naglaa Zaki" and press send connection request
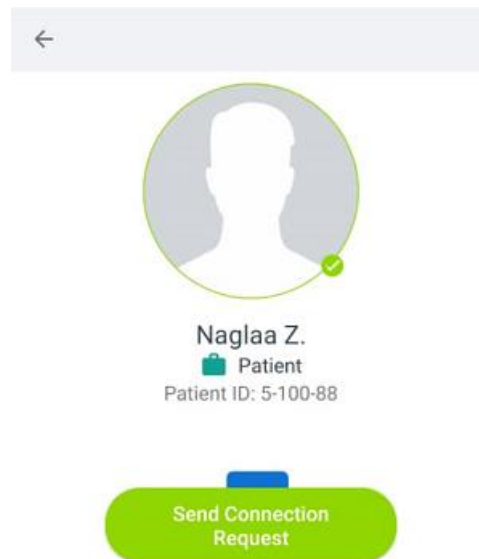
7) [Optional] Use the back button and close the search screen.

8) [Optional] Wait for the patient to accept the connection request.

9) Once the patient accepts the connection request on his App, the patient will appear under the connection tap in the clinician app.

10) Now you can start monitoring the patient by clicking on the 3 dots on the top right on the screen and choose "Monitor patient" from the drop down menu.
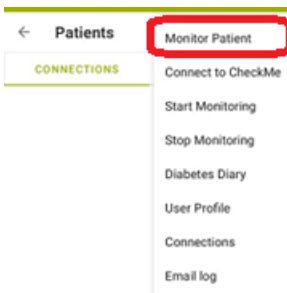
11) The patient vital health signs will be transferred from the patient phone to the clinician given that the patient has started the monitoring process on his app (read the patient app operation steps for more details).


The image below shows how patients live monitor looks like, you see the patient location along with the vital signs averages, highest and lowest values. In the middle you see the most recent measurement. To understand more about each measurement click on the measurement box. A detailed explanation will shown

12) The app uses background service to do the task of retrieving patient details and if it is enabled you can see the notification sign as shown in the image below.


13) To close the background monitoring you have to select shutdown app from the right menu as shown in the image below
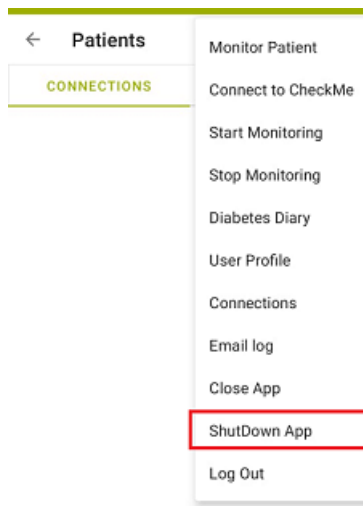
14) If the app is closed (monitoring process will still retrieve patient vital health signs) and if you want to open the Live monitoring screen in the app, pull down the nonfictions list and click on the nonfiction as shown below
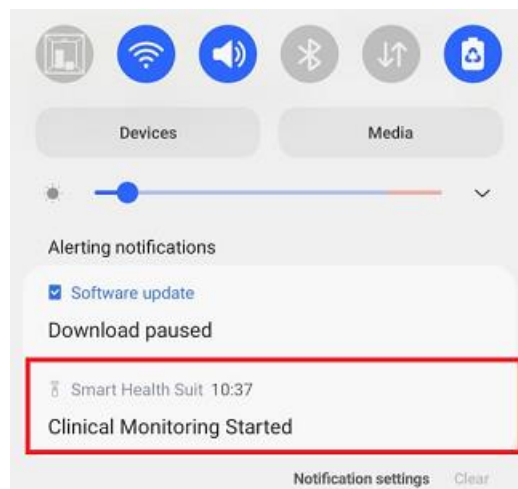
15) Both versions of the App have AI prediction form for cardiovascular diseases. Chose the menu item as shown below. Internet connection is needed.
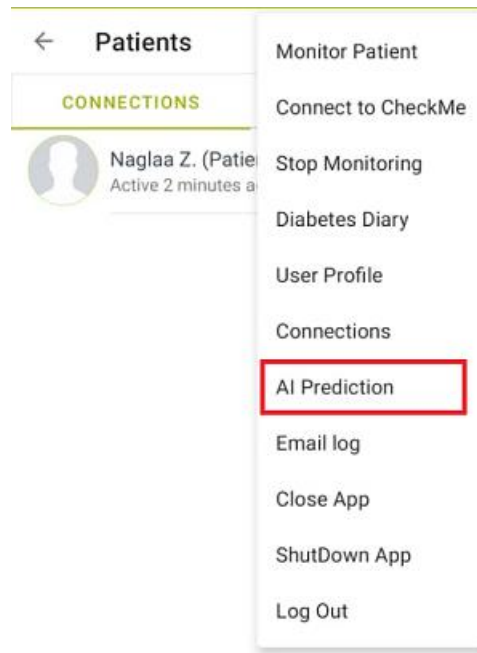
You need to key-in the following information before pressing predict:

1) Age in years
2) Height in cm
3) Weight in kg

4) Systolic pressure (range from 120 mm Hg to 200 mm Hg)

5) Diastolic pressure (range from 60 mm Hg to 100 mm Hg)

6) Cholesterol level (Normal: Less than 200 mg/dL; Above normal : 200 to 239 mg/dL ; High: 240 mg/dL)

7) Fast glucose level (Normal : 99 mg/dL or lower; Above normal: 100 to 125 mg/dL; High: 126 mg/dL)
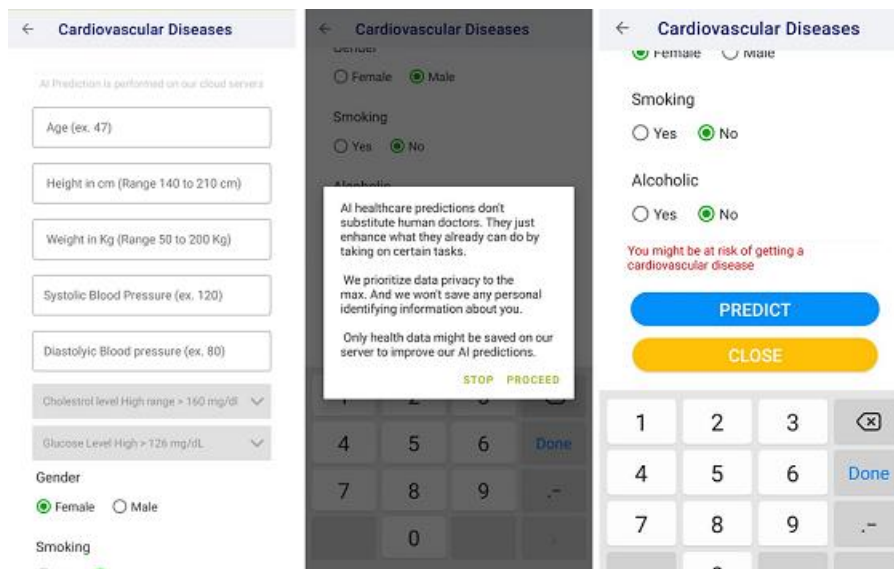
Explainer Videos:

1. How can a clinician find patients to monitor ? https://youtu.be/EY8o6Rn5pF0

2. How to send health data to a clinician?
   https://www.youtube.com/watch?v=js1otpbhqyE&t=4s

3. How a clinician can chat with patients? https://youtu.be/oEE6SbC0ib0

4. How guardians / Clinicians can monitor patients
   https://youtu.be/CxRpQkLE9uA

5. Smart Health Checkme Package : https://youtu.be/wxWK_hs2IrY

6. How to Accept App necessary Permissions?
   https://www.youtube.com/shorts/jcHHqhMXs3U

7. How to register a user on the App? https://youtu.be/dZoWLekyL10

8. Live Monitoring for patients https://youtu.be/uz3wkkcGdHA

9. Patient Offline showcase (without connecting to Checkme) :
   https://youtu.be/wmGJE1QNHo8

10. Diabetes Diary - Smart Health https://youtu.be/ztlcYvRVByE

11. [High Risk] Cardiovascular diseases Prediction using AI **https://youtu.be/0797Foqn4lI**

12. [Low Risk] Cardiovascular diseases Prediction using AI https://youtu.be/s9SgSawY7pw

Glossary:

<u>Cardiovascular disease :</u> A type of disease that affects the heart or blood vessels.

<u>Prediabetes stage:</u> It is start of the road having diabetes disease and can be recognized by fasting glucose level of 100 to 125 mg/dL (5.6 to 6.9 mmol/L)

<u>Vital signs :</u> are a group of the four to six most crucial medical signs that indicate the status of the body's vital functions. These measurements are taken to help assess the general physical health of a person, give clues to possible diseases

<u>Artificial intelligence (AI) :</u> uses mathematical and statistical methods to predict the value or status of something of interest. Artificially intelligent computer systems are used extensively in medical sciences. Common applications include diagnosing patients, end-to-end drug discovery and development, improving communication between physician and patient, transcribing medical documents, such as prescriptions, and remotely treating patients.

<u>ECG:</u> An electrocardiogram (ECG) is a simple test that can be used to check your heart's rhythm and electrical activity. Sensors attached to the skin are used to detect the electrical signals produced by your heart each time it beats.

Diabetes: With diabetes, your body either doesn't make enough insulin or can't use it as well as it should. Diabetes is a chronic (long-lasting) health condition that affects how your body turns food into energy

Remote patient monitoring (or remote health monitoring): allow providers to monitor, report, and analyze their patient's acute or chronic conditions from outside the hospital or clinic setting. They enable real-time understanding of a patient's disease state, enabling the provider to make proactive clinical decisions.

Clinical Care: used to help people to know what care to expect for a particular clinical condition and to help them to make informed decisions about treatment in collaboration with their health professional.

NEWS (national early warning score): assessment to obtain the score for the evaluation of the patient. It is based on the aggregation of the six physiological parameters, four of them are respiration rate, temperature, systolic blood pressure, pulse rate and the other two which are also known as fifth vital sign and are level of consciousness or new confusion and oxygen saturation.

Checkme: All-in-one vital signs monitor for doctors, caregivers, and patients. Integrates ECG/EKG, ECG Holter, SpO2 (oxygen saturation), PI (perfusion index), NIBP (Non-Invasive Blood Pressure), body temperature, and pedometer in one device with a palm-sized design.