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CS522-Mobile Systems and Applications

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# Design
# Framework

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# CS522 Mobile Systems and Applications

# FUNCTIONAL AND DATA ELEMENT

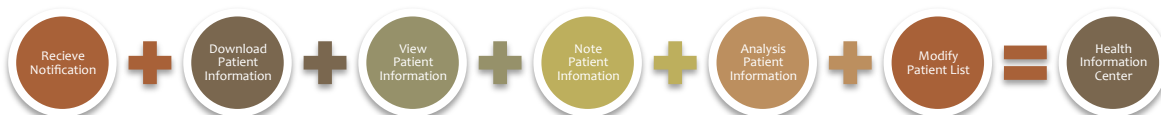– ## CLIENT'S INTERFACE:

1. ### Health Information Collector

**Gather Health Information** + **Modify Health Information** + **Upload Health Information** = **Health Information Collector**

2. ### Appointment Maker (optional)

**Recieve Appointment** + **Modify Appointment** + **Send Appointment** = **Appointment Maker**

– ## COMMUNITY HEALTH WORK'S INTERFACE:

1. ### Health Information Center

**Recieve Notification** + **Download Patient Information** + **View Patient Information** + **Note Patient Infomation** + **Analysis Patient Information** + **Modify Patient List** = **Health Information Center**

2. ### Community Health Worker's Center

**Communication with CHWs** + **Exchange Patient Information** + **Modify Dignosis Information** + **Show their location** = **CHW's Center**

3. ### Location Service Center
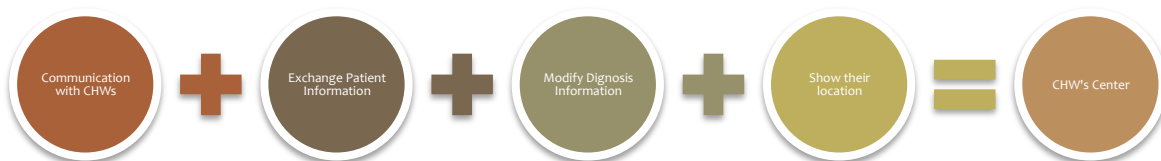
**Modify MapList manually** + **Update Map by Location Change** + **Navigate CHWs to Patient** + **Track patient's location** + **Show CHWs' locations** = **Location Service Center**

4. ### Appointment Maker (optional)

**Recieve Appointment** + **Modify Appointment** + **Adjust Appointment by location** + **Send Appointment** = **Appointment Maker**
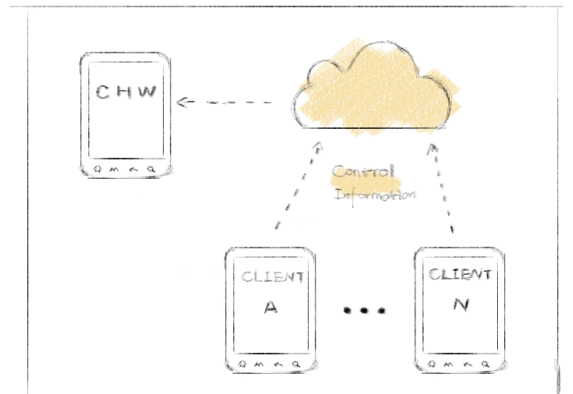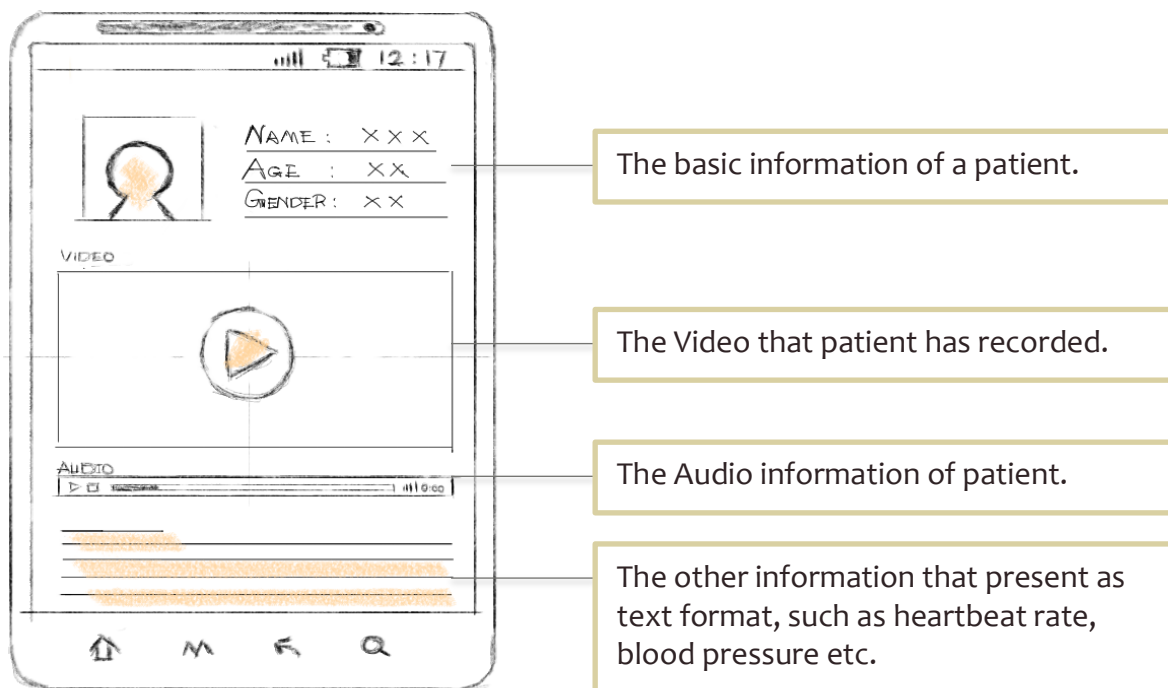
## FRAMEWORK SKETCH

− **OVERALL COMMUNICATION STRUCTURE:**


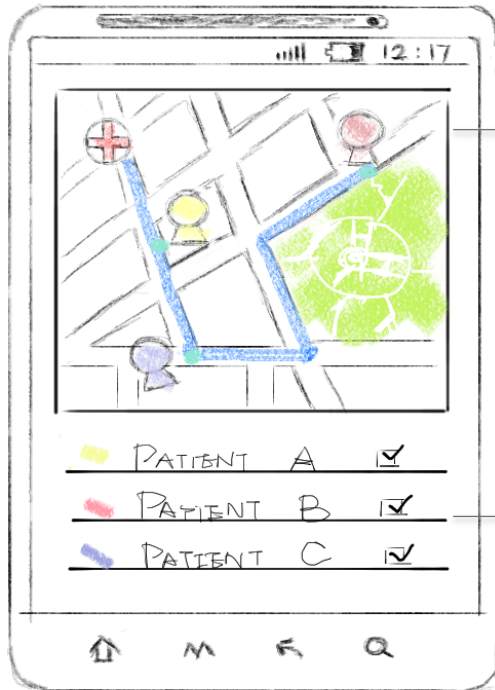
Figure 1 Overall Communication Structure (CHWs and Client)

− **COMMUNITY HEALTH WORK'S INTERFACE:**

1. Health Information Center



The basic information of a patient.

The Video that patient has recorded.

The Audio information of patient.

The other information that present as text format, such as heartbeat rate, blood pressure etc.

2.    Location Service Center

The Google map contains the location information about Patient and CHWs. You could select the kind of person you want to view.

This is the Patients' list; the CHWs could modify the patient that they want to see.
And they could view the patients' information by press the icon of each patient.

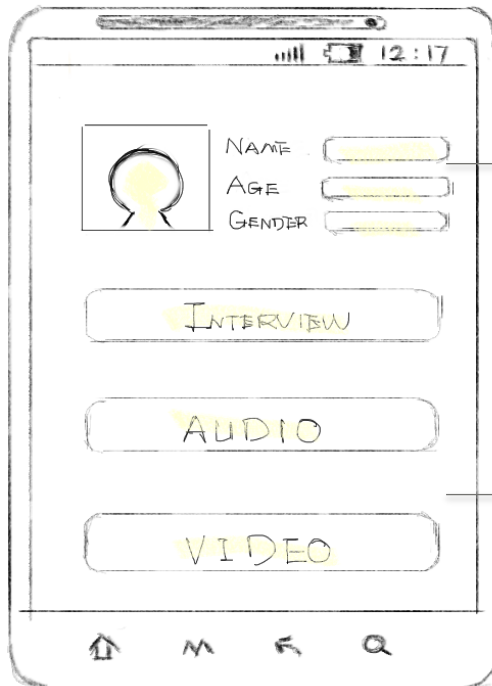3.    Community Health Worker's
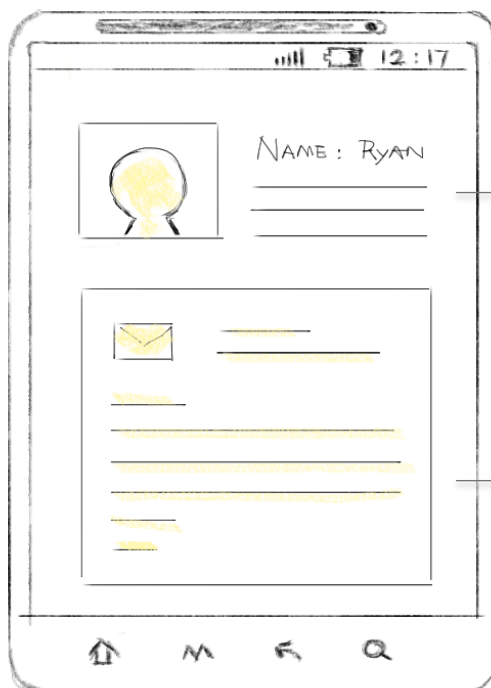
The basic information of community health worker, and also the number of co-patient.

The messages that CHWs send to user, and you could send the specific patient's information to the CHW.

— **CLIENT'S INTERFACE:**

1. Health Information Collector



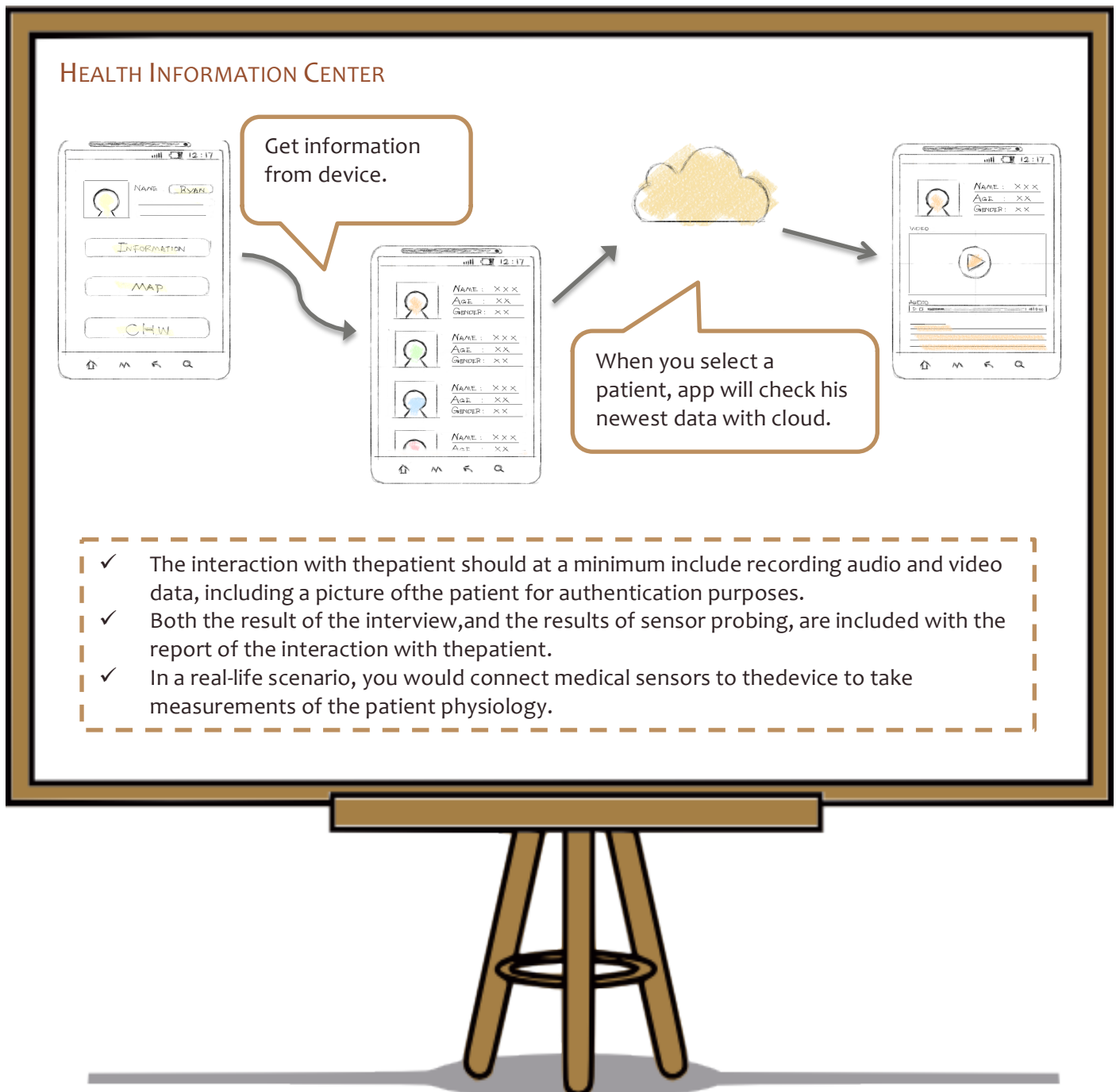Client should Input basic information in these blocks.

Interview: Several questions includes description, multiple choices etc.

Audio: Patient could record some audio data to descript their situation and need to CHW.

Video: This would help CHW knows their patients more comprehensively.

# KEY PATH SCENARIOS

— **COMMUNITY HEALTH WORK:**

### HEALTH INFORMATION CENTER



Get information from device.

When you select a patient, app will check his newest data with cloud.

- ✓ The interaction with thepatient should at a minimum include recording audio and video data, including a picture ofthe patient for authentication purposes.
- ✓ Both the result of the interview,and the results of sensor probing, are included with the report of the interaction with thepatient.
- ✓ In a real-life scenario, you would connect medical sensors to thedevice to take measurements of the patient physiology.

# DESIGN FRAMEWORK

## LOCATION SERVICE CENTER

When click a patient, the App will show the detailed information about him.

App will get patients' real-time location then update the route.
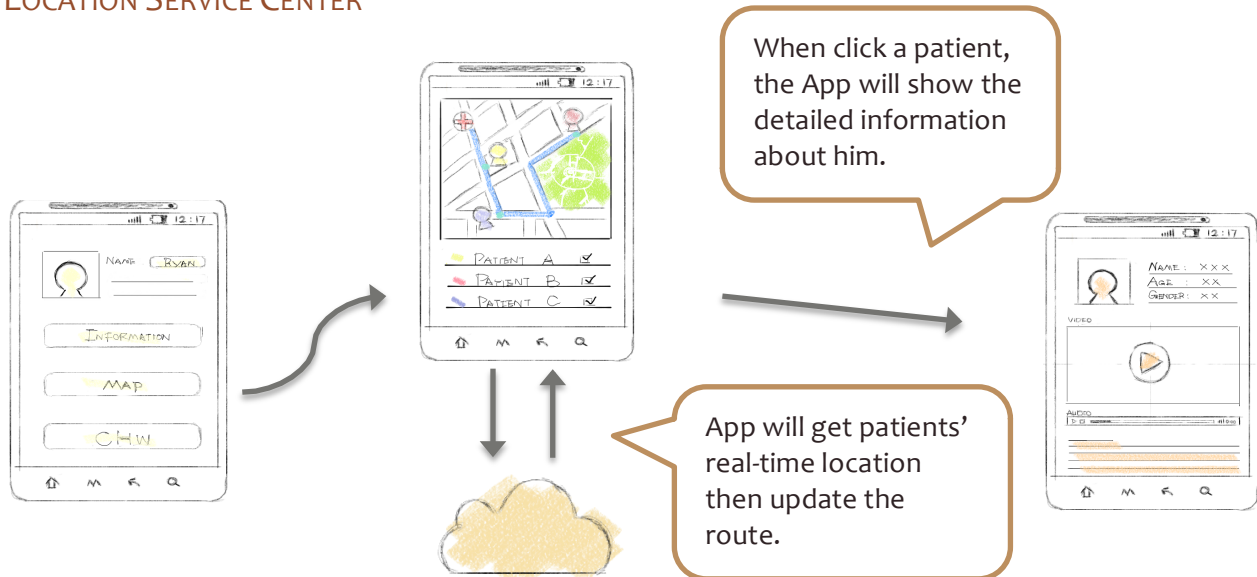
- ✓ Cloud communication will be used for the "control plane": A community health worker providestheir current location, and the cloud service will notify them of the location of the patientsthey have to see, and a waypoint navigating them to those patients.
- ✓ This information should be projected on a Google Maps service, with the option to overlay information on the map about the locations of other community health workers.

## COMMUNICATION CENTER

> Exchange information with CHWs and exchange patient's information.
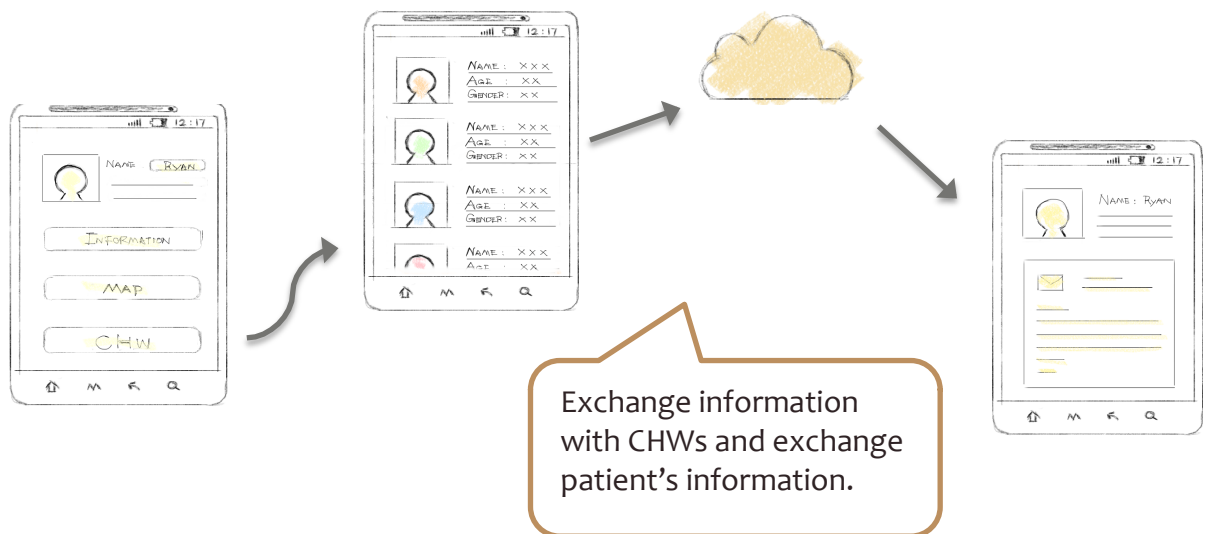
- ✓ This will provide for long-rangecommunication, and allow for eventualities such as logging of exchange of patient data, this App need only exchange simple textmessages).
- ✓ The app will use the Amazon Web Service Simple Queuing System (SQS) to perform reliable point-to-point message-based communication.

‒  CLIENTS:

## HEALTH INFORMATION COLLECTOR

After interview and multi-media record the app will upload the data to cloud.



- ✓ This tool generates a Q&A user interface from a specification using forms with questions. Various forms of data may be saved, not just text-based forms data.
- ✓ The interaction with the patient should at a minimum include recording audio and video data, including a picture of the patient for authentication purposes, and geolocation information for geographic tracking of patient health data.