National Sickle Cell Anaemia Elimination Mission

User Manual
For
Sickle Cell Mobile Application

Issue Organization:
Ministry of Health and Family Welfare

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App Developed by

Health Projects Division
National Informatics Centre
Ministry of Electronics &
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Objective

The objective of 'Sickle Cell' mobile application is to facilitate beneficiary registration, entering test details (for test methods like solubility, HPLC/Electrophoresis, Point of Care, CBC etc.) for various haemoglobinopathies like Thalassemia, Haemophilia and Other Variants apart from Sickle Cell Anaemia, captured in both online and offline mode. Furthermore, the application hasbeen integrated with ABDM (Ayushman Bharat Digital Mission) ecosystem. The application supports ABHA ID based registry as well as ABHA ID creation using Aadhaar ID with OTP or Fingerprint based or Face based or Demo based Biometric Authentication.

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1.Introduction

Sickle Cell:

Sickle Cell Disease (SCD) is a group of blood disorders typically inherited from a person's parents. It results in an abnormality in the oxygen-carrying protein hemoglobin found in red blood cells. This leads to a rigid, sickle-like shape under certain circumstances. A number of health problems may develop, like attacks of pain, anemia, swelling in the hands and feet, bacterial infections and stroke. Long-term pain may develop as people get older.

National Sickle Cell Anaemia Elimination Mission:

To address this serious issue of Sickle Cell Anaemia, other haemoglobinopathies and to prevent morbidity, mortality and reduce prevalence rate, '*National Sickle Cell Anaemia Elimination Mission'* has been proposed and is being launched in 17 states and UTs where this disease is most common.
Under this programme, NIC has developed following software:

- Web Application/portal
- Common API to migrate state existing data
- Mobile Application

Administrative Information

App Name	Sickle Cell
Department	National Health Mission, Ministry of Health and Family Welfare, GoI
Sector	Health
Category	G2G
Coverage	All Government Health Facilities in India
Developer	National Informatics Centre

Technical Details

Back-end Office Application	https://sickle.nhm.gov.in/sickle2.0/
Platform	Android
Size	15 MB
Language	English
Last Update	19-December-2024
User Authentication	Required, through Mobile number and OTP of associated Health Facility In-charge
Auto Alerts	Yes, through SMS and in app
Special Permissions	Camera
Internet Requirement	Required. But app will work offline also after successful login while connected.
Associated Parent website URL	https://sickle.nhm.gov.in/sickle2.0/

2. Pre-requisites:

1. Before downloading the mobile app, the Health Facility In-charge must get her/his mobile number registered through concerned District User / State User / State Admin. Health facility user will be able to login only if her/his mobile number is registered. Mobile number registration is mandatory as the facility user will received OTP on the registered mobile number.

2. Installation of RD Service for Finger Print Biometric from Play Store is mandatory. Example :-

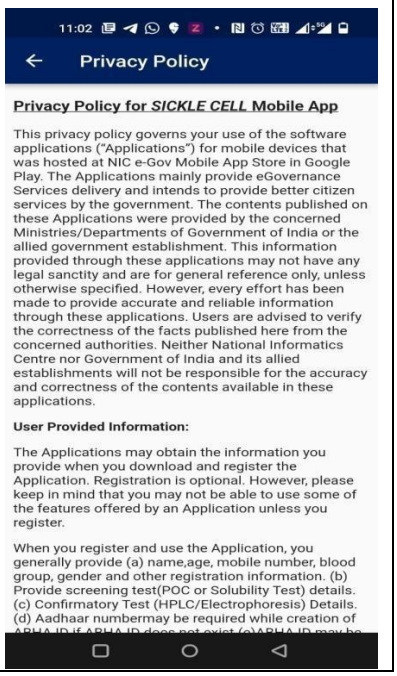
- Morpho SCL RDService application for MORPHO Biometric Fingerprint sensors.
- Mantra RD Services application for MANTRA MFS100 Biometric Fingerprintsensors.
- Mantra L1 RDServices application https://play.google.com/store/apps/details?id=com.mantra.mfs110.rdservice for MFS110 L1 RDServices Biometric Fingerprintsensors.

3. It is mandatory for user to download *AadhaarFaceRd* from Play Store for Face Authentication.

3. Mobile App Download:

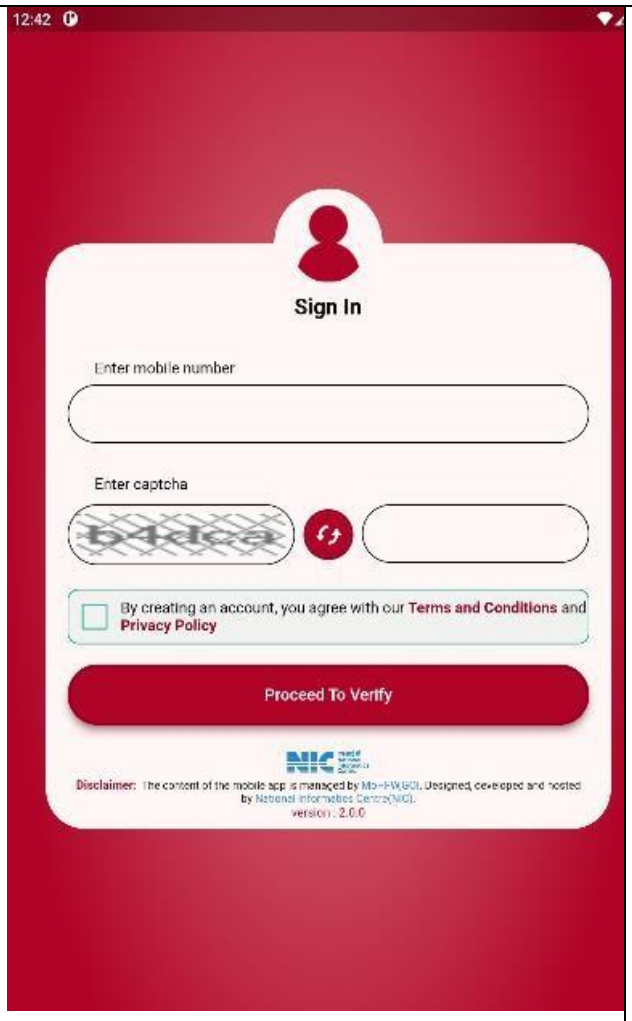
The user can download and install the app from Google Play-store for Android and Appstore from iOS.

Once downloaded the user is suggested to go through the Privacy Policy, link given on login page before using the app.At present, the app is available both for android and iOS.



4. Screens:

4.1 Login

	
In order to Login into the Application, user has to enter her/his mobile no. and captcha and then click on *'Proceed to verify*' button. Internet is required to Sign In.	Next, user will be asked for OTP received on the registered mobile number. User will have to enter OTP and then click on *'Proceed to verify'* button. Internet is required to proceed.

4.2 MPIN

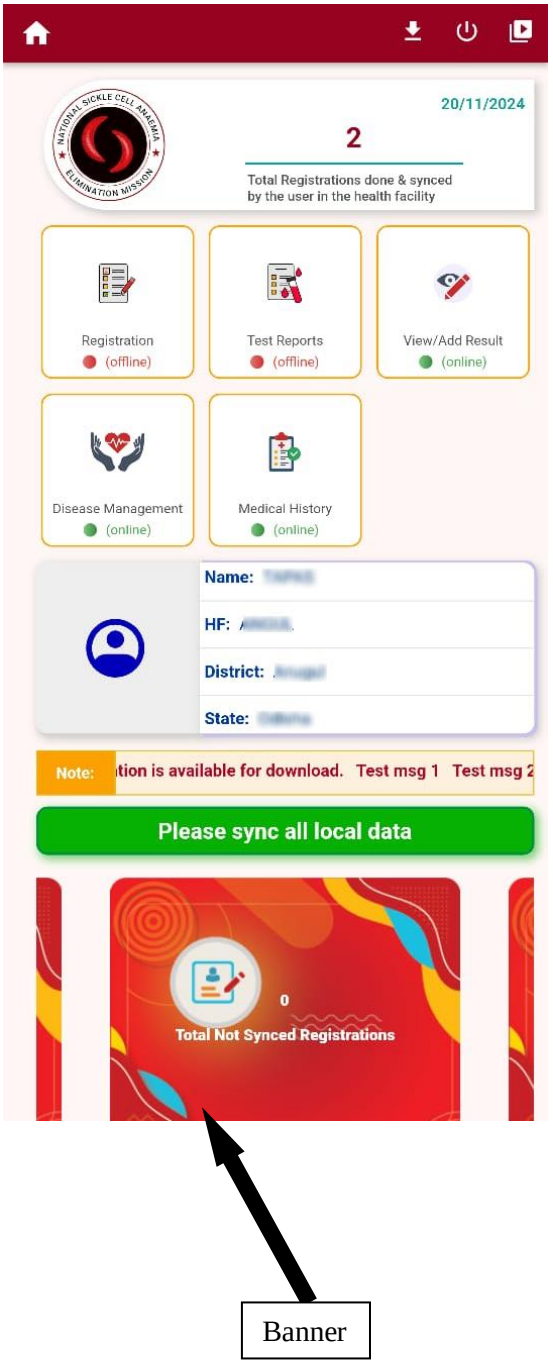
Next, user has to generate the MPIN which will be used to enter into the app next time onwards. Now user will be redirected to Home Screen. Internet connection is not mandatory to set the MPIN.	

4.3 Home

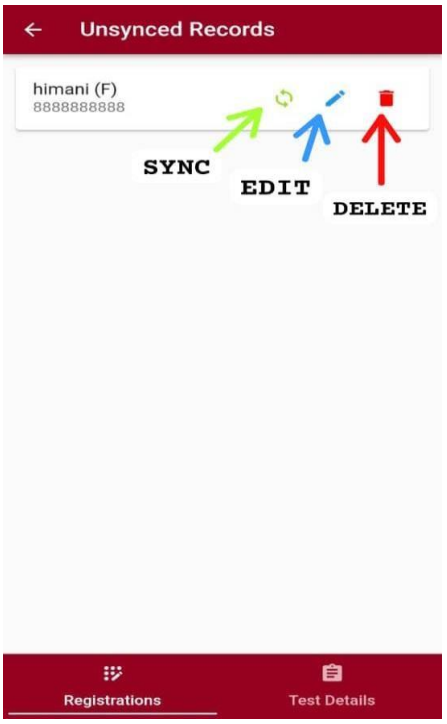
Internet connection is not mandatory to access Home.

This app contains following features:

- **Registration:** To record the screened person's details.
- **Test Reports:** To record the Screeningand Confirmatory test of beneficiary.
- **View/Add Result:** To check and edit the test details of the beneficiary.
- **Syncing:** To Sync offline (local database) data with the server's data.
- **Media Gallery:** To download the Videos, Links, PDFs etc.
- **Note:** Notifications are rendering direct from the server.
- **Master Data:** Master based Subtypes, Total Registrations done by Health Facility, State and District LGD data can be configurable by clicking the arrow on the top right corner of the Home Page.
- **Disease Management:** To record the details of Medications, Lab Investigations, Blood Transfusions, and Vaccinations of the diseased patients.
- **Medical History:** To review the Medicines, Lab Investigations, Blood Transfusions, and Vaccinations administered to the diseased patients in the past, based on their visit history.



4.3.1 Unsync Records

By clicking on banner user able to see the records which are not synced with the server. So User can Sync, Edit the Delete the existing record.	

4.4 Registration

Relevance of registration through ABHA ID:

ABHA number is a 14 digit number that will uniquely identify you as a participant in India's digital health care ecosystem.
It is important to standardize the process of identification of an individual across health care providers, to ensure that the created medical records are issued to the right individual or accessed by a Health Information User through appropriate consent. The ABHA Number will be used for the purposes of uniquely identifying persons and authenticating them.
Thus, the registration records created in mobile app through ABHA will be able to link themselves with health records created in other integrated programmes.

Hence, the facility user is recommended to register the screened people through ABHA ID.

Note: * ABHA is now mandatory for patient registration *

Registration of the screened person can be done through following ways:

- Through ABHA ID
- Proceed without ABHA

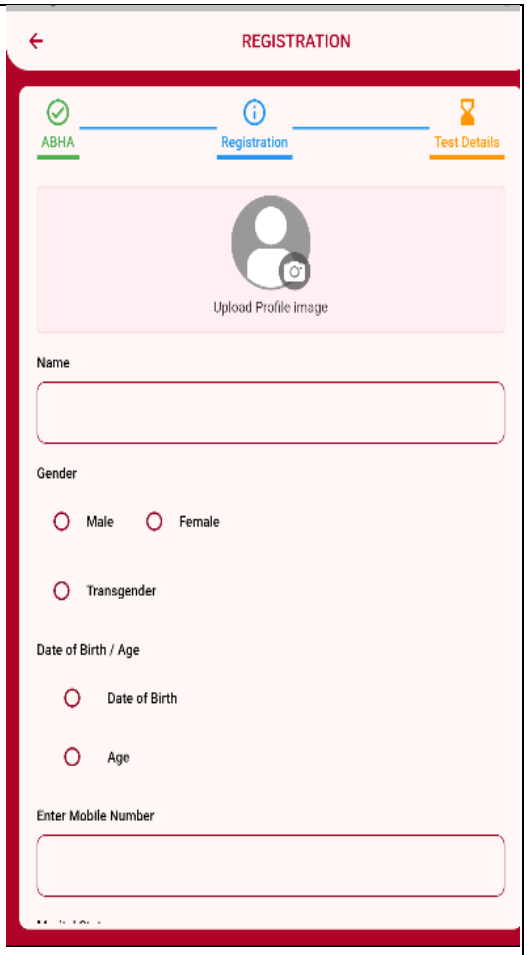
Other fields in Registration:

- Name
- Gender
- Marital Status
- Father/Husband Name
- Blood Group
- DOB
- Address
- Mobile Number
- Category
- Registration Date

- **Save & Test**
    - Saves screened person's details.
    - To record test details immediately following registration.
- **Save**
    - Saves screened person's details.
    - User needs to open 'Screening Test Details' to add test details later.

Note:

- Registration can be done online as well as offline. In offline mode user can fill details manually and register themselves without ABHA and AADHARID.



4.4.1 With Aadhaar/VID (Create ABHA)

Have ABHA Number

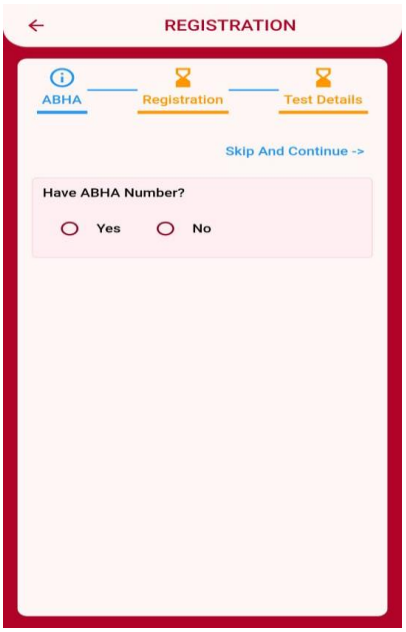
- No
    - If not then you can:
        - Create ABHA through AADHAARno. or VID.
        - Proceed without ABHA andentering the details manually
        - Internet Connection is mandatory.

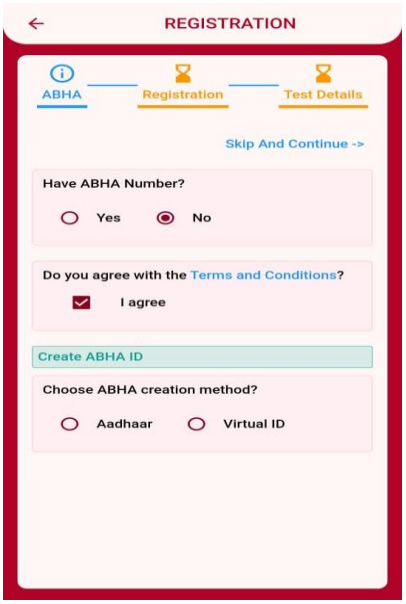
Note:

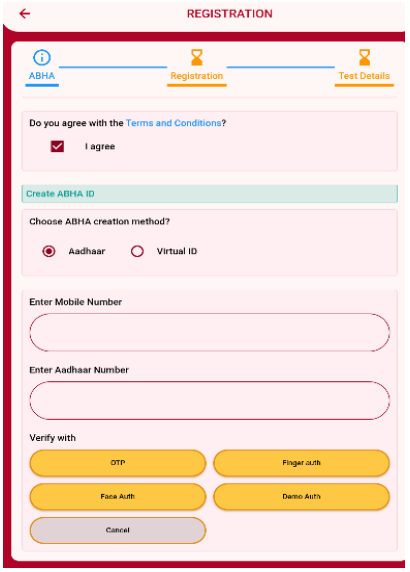
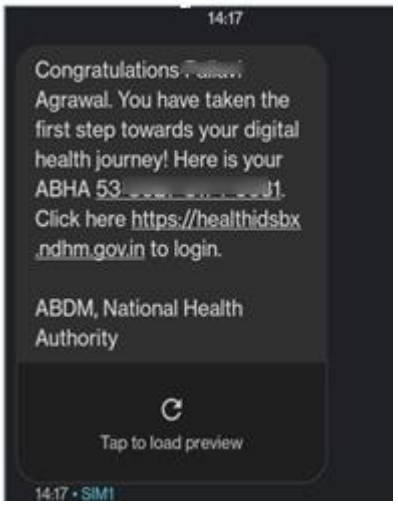
- *The screened person is required to carry AADHAARID for creation of ABHA ID.*
- *State and District are automatically populated using ABHA data retrieved via ABDM(NHA) APIs.*

To create ABHA ID, following options are available:

- Through Aadhaar ID
- Through Virtual ID





To create the ABHA ID through Aadhaar ID/Virtual ID the user is recommended to use any of these options in the ordergiven below: • **Through OTP verification** • **Through Finger Print Authentication**: Can be used if the screened person's mobile number is not seededwith her/his Aadhaar ID. • **Through Face Authentication:** In absence of Aadhaar seeded mobile number and STQC certifiedBiometric device, the user is advised to use this option.	
Mobile no. asked, willbe used to send the ABHA creation message.	

4.4.1.1 Using OTP

Through OTP Verification

- AADHAR OTP will be received on AADHAAR registered mobile no.

4.4.1.2 Using Fingerprint Bio Auth

- The RD Service of the Biometric device used needs to be installed from Play Store.

Note:

1. *State NHM procure any STQC certified Biometric Device from market.*
2. *Each device provider should have RD Service available on Android Play Store.*
3. *Before placing the order, state NHM official may link the device with Sickle mobile app.*
4. *Finger authentication not available in iOS due to unavailability of Finger Rd services on AppStore.*

4.4.1.3 Using Face Bio Auth

Through Face Authentication:

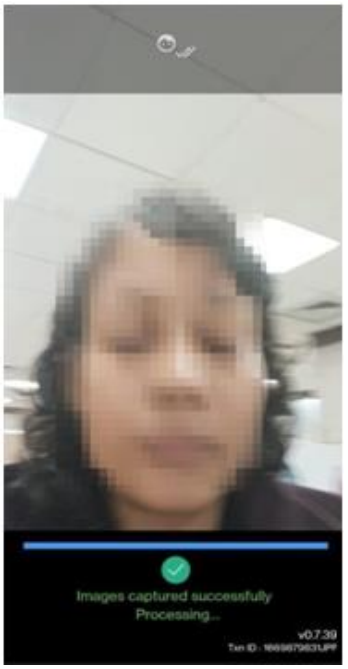
• To access this feature the user needs to download AadhaarFaceRd from Play Store.

https://play.google.com/store/apps/details?id=in.gov.uidai.facerd

The user is requested to follow the instructions shown in RD service Application to capture her\his image successfully.

Note:

• USB debugging should be off while capturing the image.
• Face authentication not available in iOS due to unavailability of FaceAdharRd in respective of Rd services on AppStore, the option of Face Auth has not been provided in iOS at present.



Device Specifications:

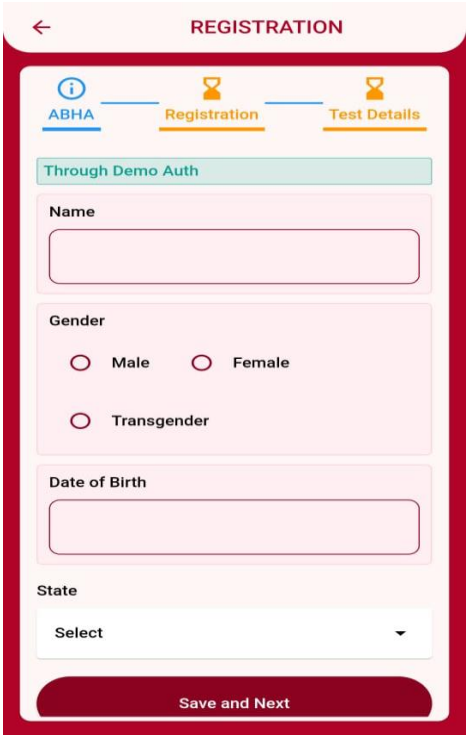
Feature	New Procurement
Android API version	Android 9 (SDK 34) or greater
RAM	4+ GB
Disk Space	64 GB (Minimum 500MB free diskspace)
Display Size	8 inches or greater
Connectivity	Internet Connectivity required
Camera Resolution	5MP or greater
Camera Types	Integrated Rear and Front camera
Non-Rooted OS (Google Play Store Compatible)	Yes

4.4.1.4 Using Demo Auth

Through Demo Authentication:

Screened person can create ABHA through Demo Auth for this screened person have to fill their details as follows:

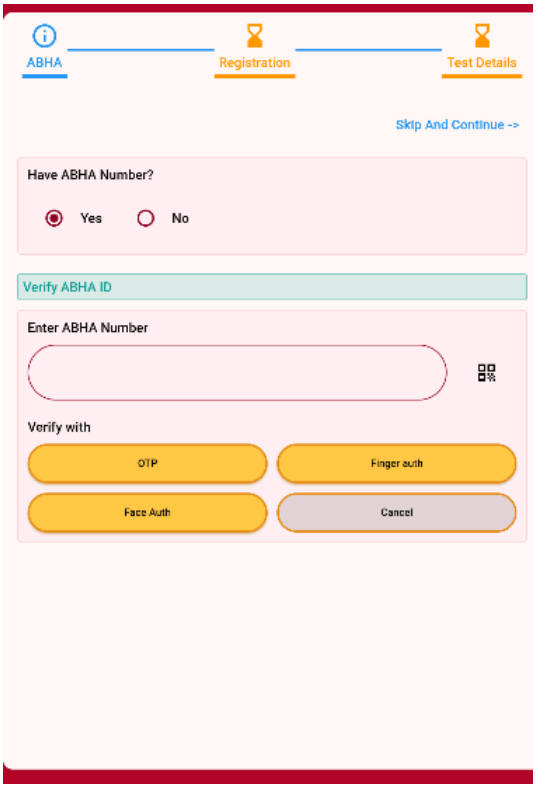
- Name
- Gender
- Date of Birth
- State
- District



4.4.2 With ABHA ID

Have ABHA Number

- Yes
- If have then enter ABHA Numberusing the following options similar to ABHA ID creation.
- **Through OTP verification**
- **Through Finger Print Authentication**: Can be used if the screened person's mobile number is not seeded with her/his Aadhaar ID.
- **Through Face Authentication:**In absence of Aadhaar seeded mobile number and STQC certified Biometric device, the user is advised to use this option.
- Internet Connection is mandatory.



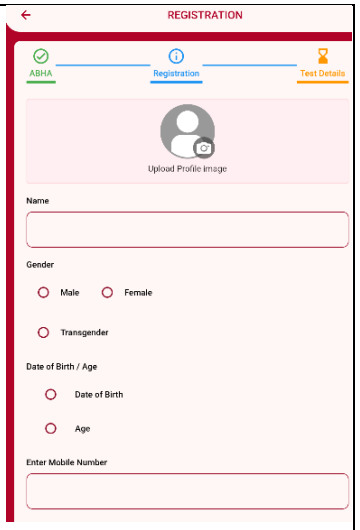
Note:

- *The screened person is required to know ABHAID.*
- *State and District are automatically populated using ABHA data retrieved via ABDM(NHA) APIs.*

4.4.3 Offline/Manual Entry

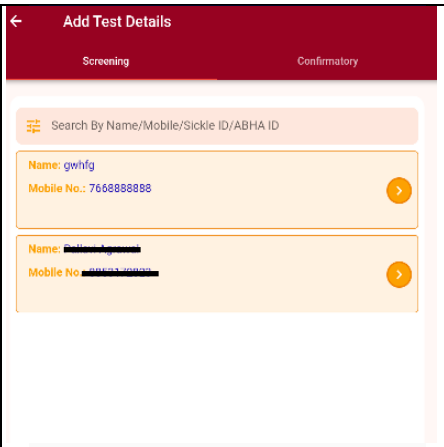
To enter all registration details manually including the person's image (by clicking camera icon). The user can opt this by selecting *Not Create ABHA* option or if she/he is offline.

Note: *State and District are automatically populated based on the health facility location of login user.*

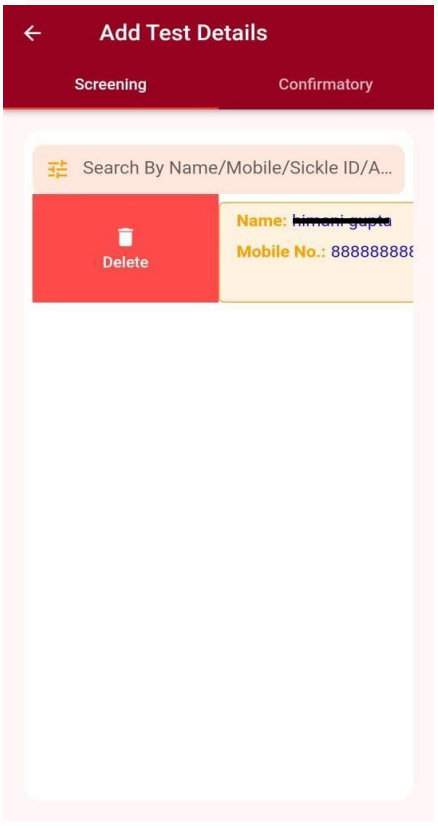


4.5.1 Screening Test List

- Displays the list of people registered and screening test details are not entered.
- Can be accessed offline.



- By sliding the record User is able to delete the record but First the record will sync with the server then it will be deleted.



4.5.2 Screening Test Details

Disease Type : Sickle Cell

- Test Method : Solubility Test
- Date of Sample Collection
- Date of Result
- Solubility Test Result

Disease Type : Thalassemia

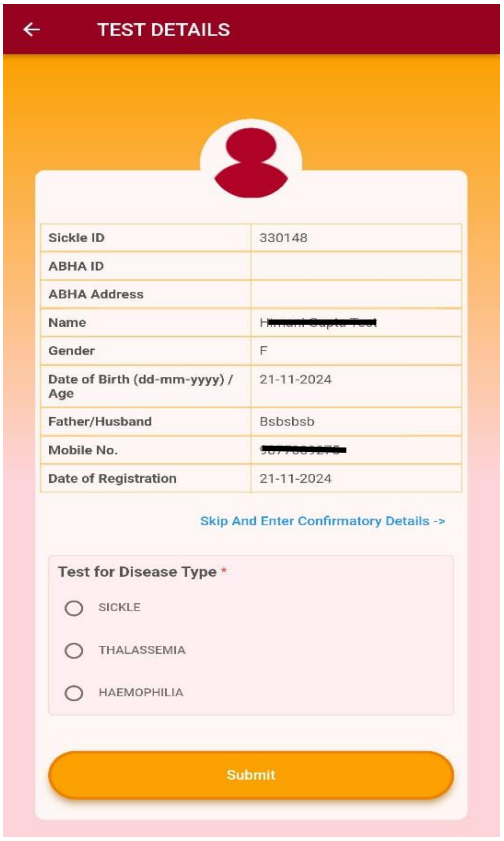
- Type of Test
- Date of Sample Collection
- Date of Result
- Result
- Result Subtype

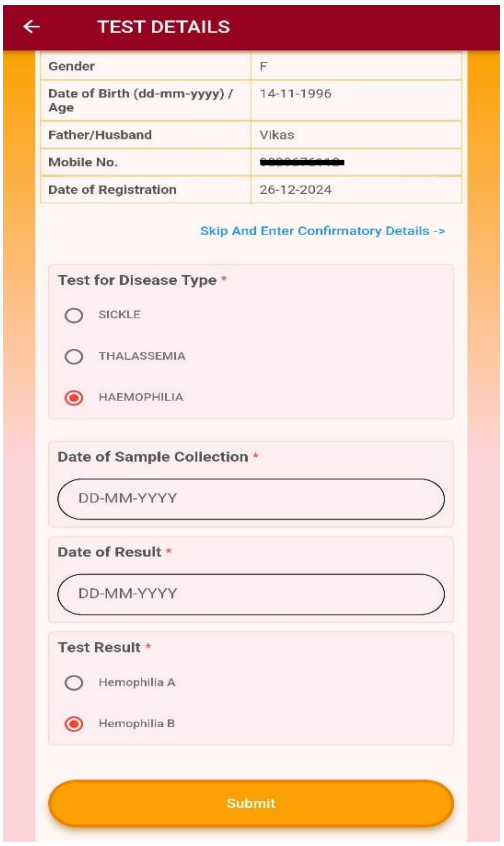
Disease Type : Haemophilia

- Date of Sample Collection
- Date of Result
- Result

Details can be saved offline.

Note: No Screening of beneficiary can be done after Confirmatory.





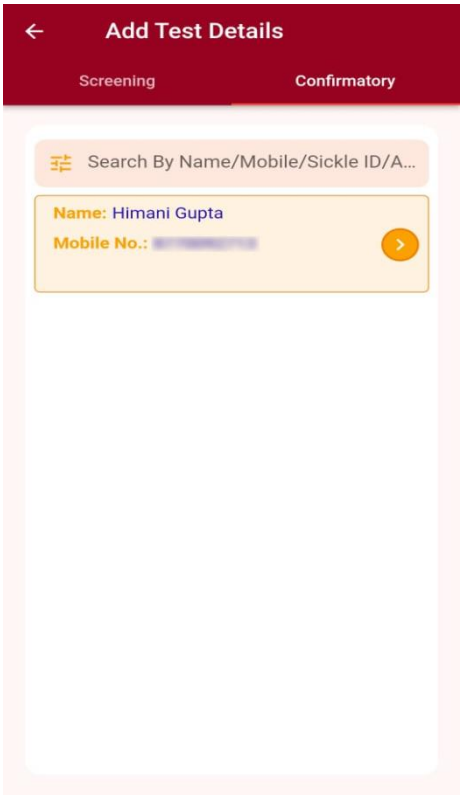
4.6.1 Confirmatory Test List

- Displays the list of people whose solubility tests were found positive but the results of HPLC/Electrophoresistests are not entered.
- Can be accessed offline.

Note:

1. Provision to enter confirmatory test details directly with or without completing screening test details.

2. POC to come under confirmatory test and not under Screening Test.



4.6.2 Confirmatory Test Details

Disease Type : Sickle Cell

1. Solubility Test
    - Date of Sample Collection
    - Date of Result
    - Solubility Test Result
2. Point of Care Test
    - Vendor Name
    - Result
    - Result Sub Type

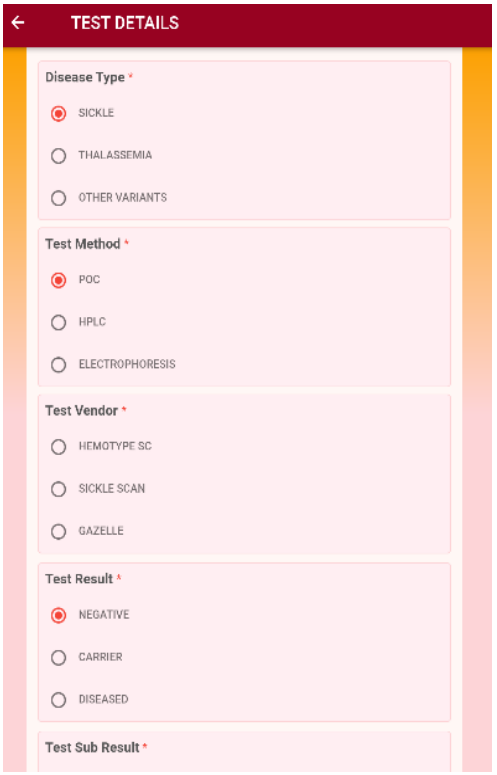
Disease Type : Thalassemia

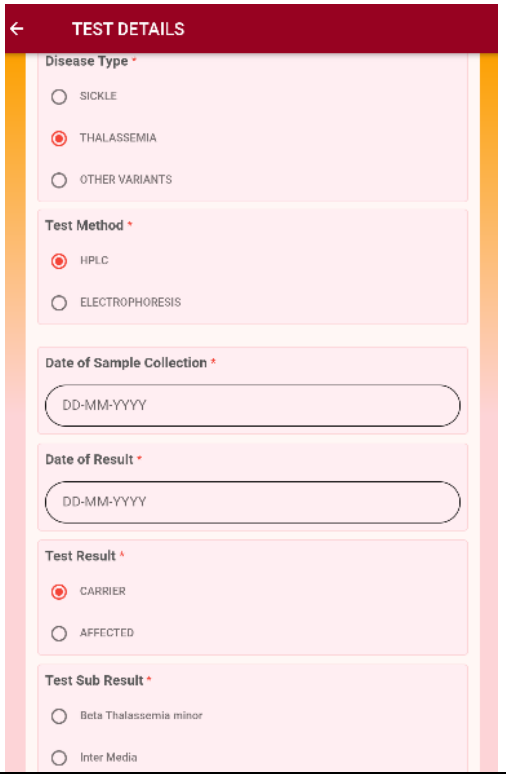
- Type of Test
- Date of Sample Collection
- Date of Result
- Result
- Result Subtype

Disease Type : Other Variants

- Type of Test
- Date of Sample Collection
- Date of Result
- Result
- Result Subtype

Details can be saved offline.



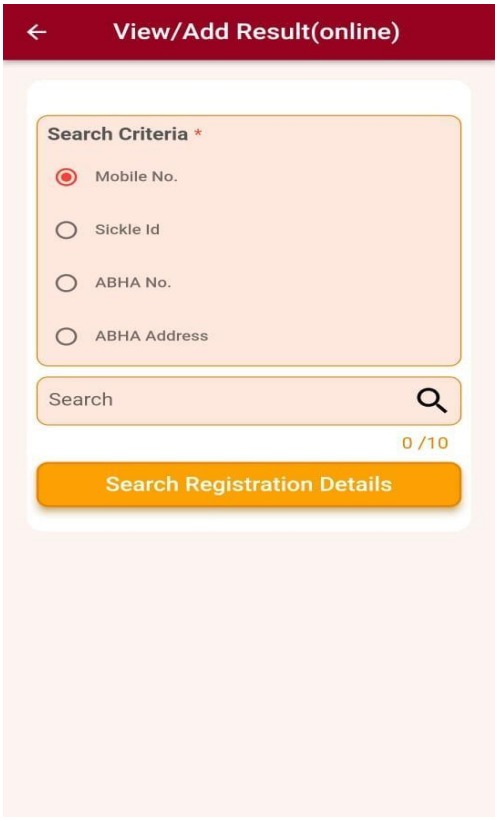


4.7 View/Add Result

- ABHA seeding provision is given for the records registered previously without ABHA.
- Repeated tests(screening and confirmatory) can be recorded for any registered person if required.

Note :

- Internet is required.



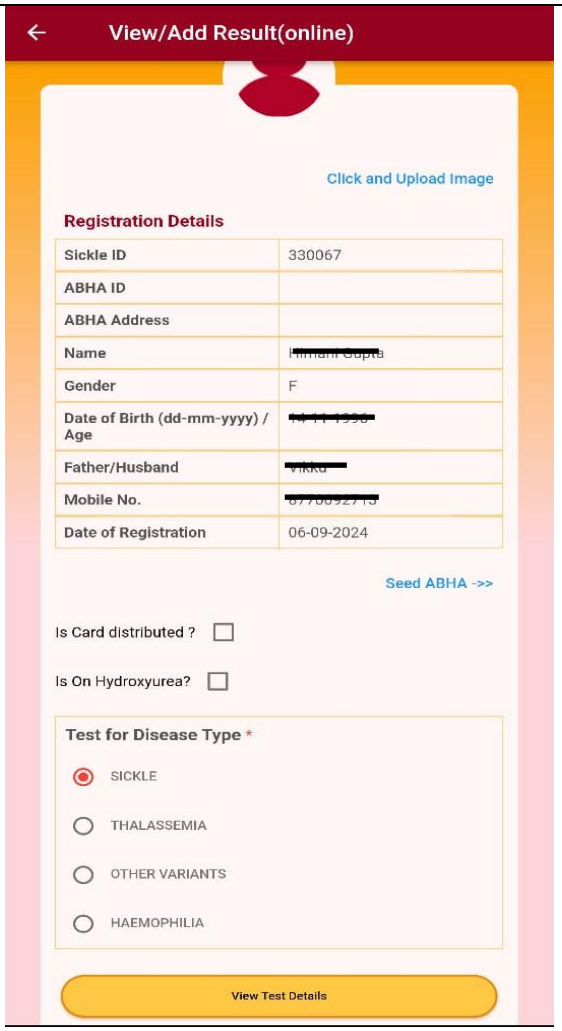
You can record the status of card distribution and Hydroxyurea.

Note :

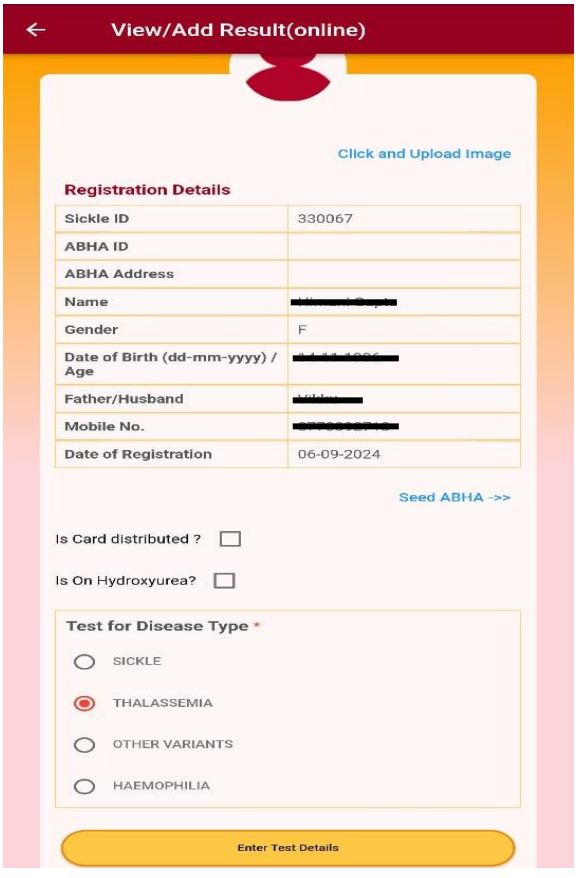
- The Hydroxyurea option is available only for diseased patients and can be updated once.

By selecting the Disease type User is able to check if the Test details are present or not.

- If Present then By pressing View Test Details button she/he will see the test details of the corresponding disease.



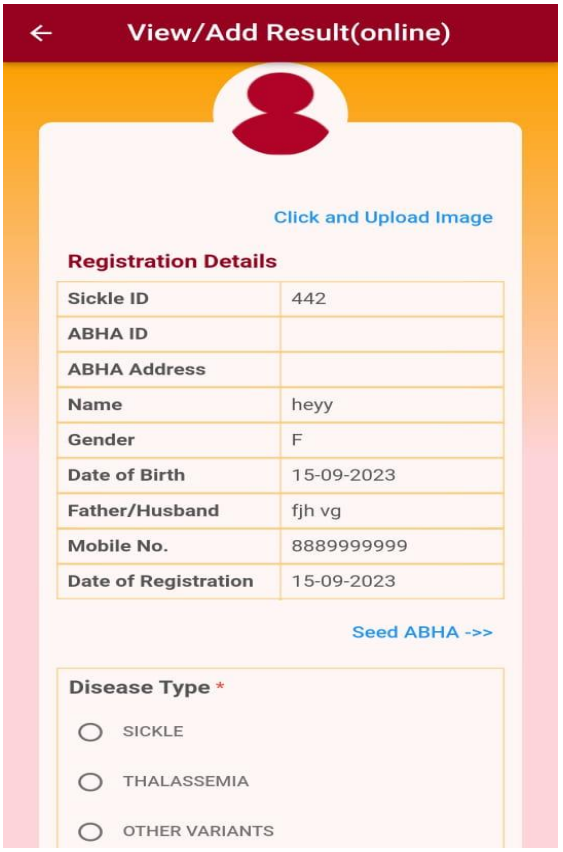
- If not Present then By pressing Enter Test Details button she/he can fill and submit the test details of the corresponding disease.



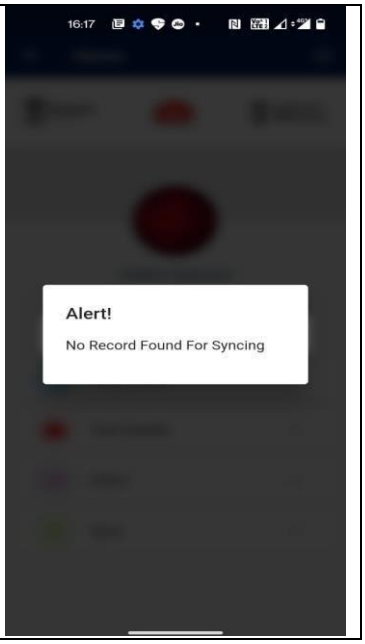
ABHA and Photo can be updated with beneficiary's profile in registration record through View/Add result.

Photo can be updated through **Click and Upload image** or by **seed ABHA** option (recommended).

ABHA can be seeded by clicking on **seed ABHA** option.



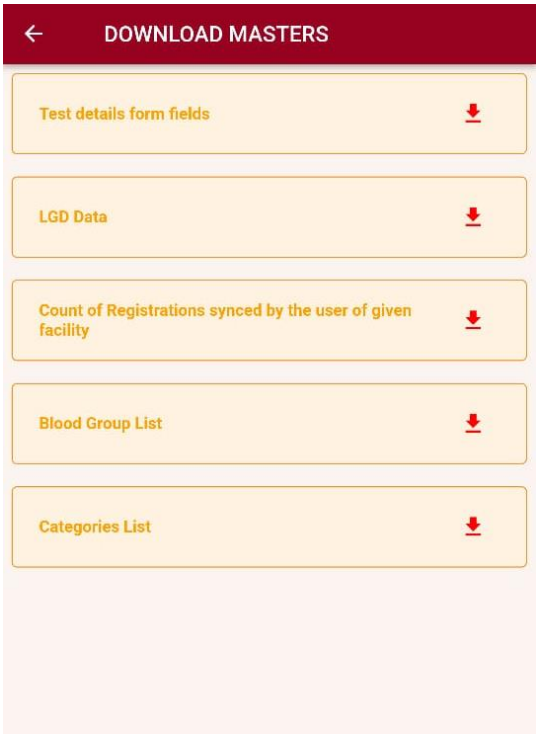
4.8 Syncing

• To sync the offline registration and test details to server. • Internet is required to sync the data. **Note**: • *The users are requested not to uninstall the app in any case, if mandatory to uninstall then before uninstalling they must sync all local data with server to ensure that no data gets lost.*	

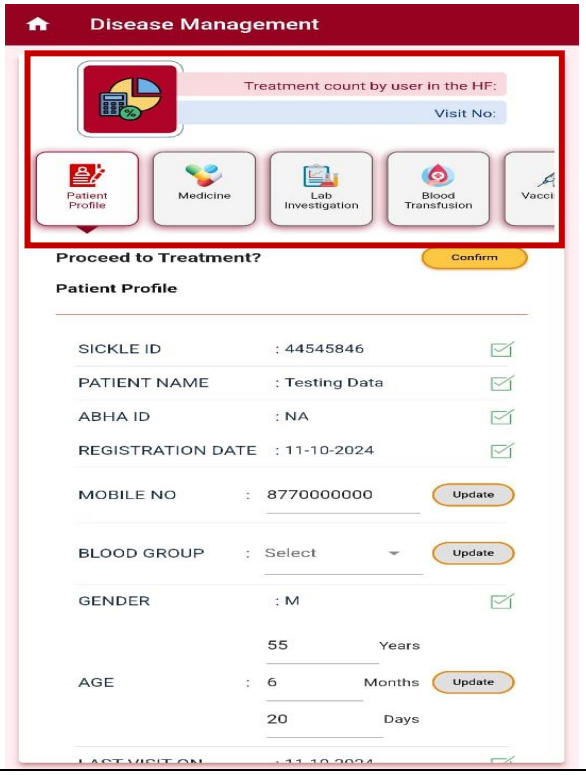
4.9 Media Gallery

Beneficiary can download the PDFs, Links and Videos from Media Gallery.	

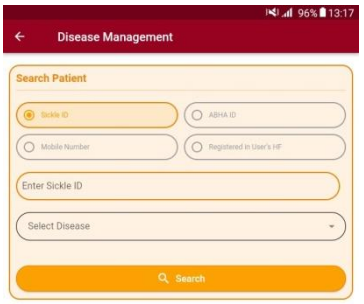
4.10 PULL MASTER DATA

Options to download through “Pull Master data” and offline LGD data option has been provided in the Pull Master data option.	

4.11 Disease Management

Disease Management includes the following sub-modules: Medicine, Lab Investigation, Blood Transfusion, and Vaccination. The Visit Number of beneficiary and the total treatment count, which represents the number of treatments provided by the HF user, are also recorded.	

4.11.1. Patient Search

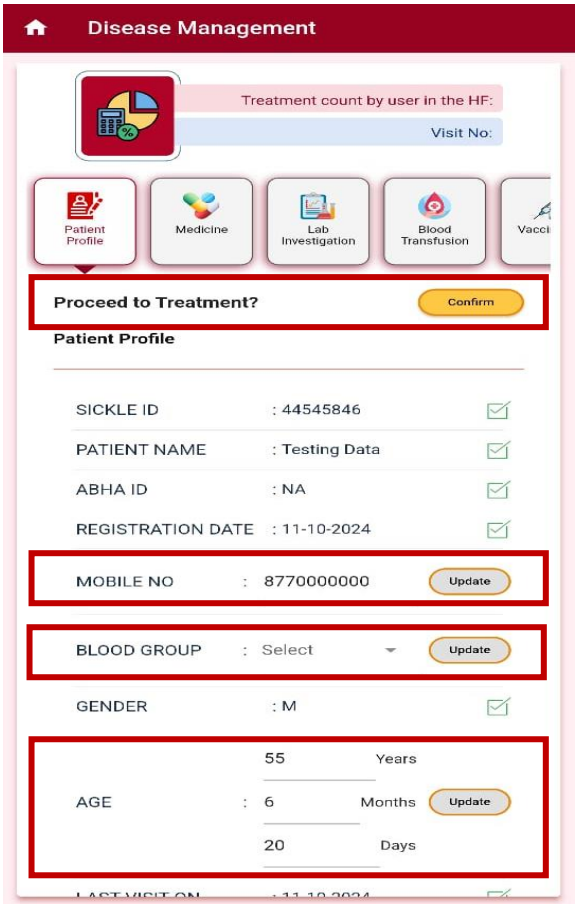
Patient search is open to all HFs if performed using Sickle ID, ABHA ID, Mobile Number or searching can be done by fetching the list of beneficiaries registered at the user's health facility (HF). **Note**: Only patients with test reports indicating disease will appear on the list.	

4.11.2. Patient Profile

The patient profile will display details such as *Sickle ID, Patient Name, ABHA ID, Registration Date, Last Visit On, Age, Mobile Number, and Blood Group*.

Users can update a *patient's Age, Mobile Number, and Blood Group* only once.

Note: After pressing the Confirm button, you can update the *Age, Blood Group, and Mobile Number*. Additionally, you will be able to enter details *for Medicine, Lab Investigations, Blood Transfusions, and Vaccinations*.

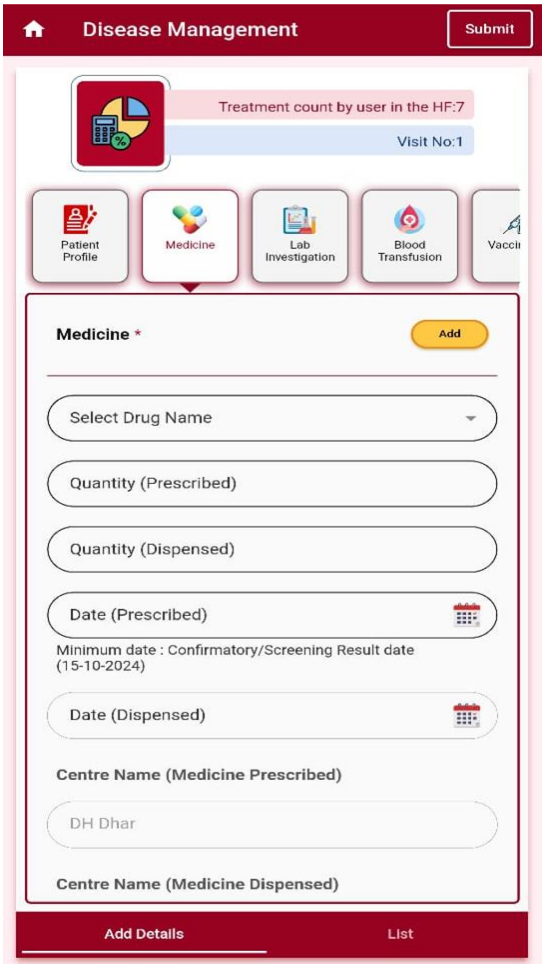


4.11.3. Medicine

In medicine, we record the *drug name* along with its *SNOMED-CT code*, *prescribed quantity*, *dispensed quantity*, *prescription date*, *dispensation date*, and *the name of the center* where the medicine was prescribed and dispensed.

Note:

- The quantity dispensed can not be more than the quantity prescribed.
- By default quantity prescribed is equal to quantity dispensed, may be modified as required.
- Minimum date of *Date(Prescribed)* will be the result date of Screening/Confirmatory test entered during beneficiary screening process.
- *Date(Dispensed)* cannot be before *Date(Prescribed)*.
- *Drug name* once taken for a visit will not show for that visit of the beneficiary.

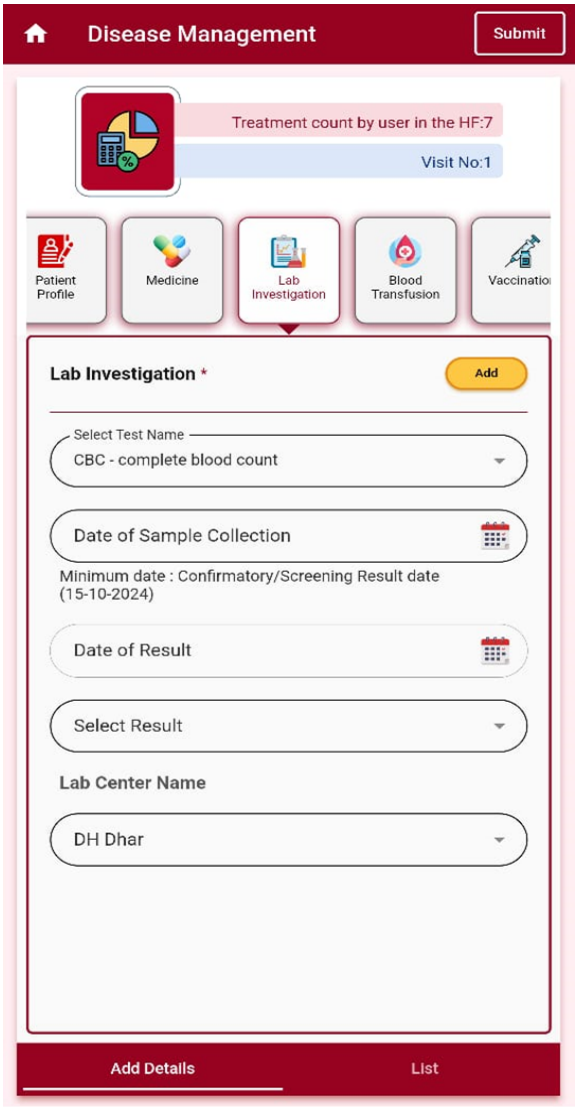


4.11.4. Lab Ivestigation

In Lab Investigation, we record the *Test Name* along with its SNOMED-CT code, *Sample Collection Date*, *Result Date*, and the *Result* (currently categorized as Normal or Abnormal using SNOMED-CT codes). Additionally, we capture the *Center Name* (default: User's Health Facility Name).

Note:

- Minimum date *Date of Sample Collection* of will be the result date of Screening/Confirmatory test entered during beneficiary screening process.
- *Date of Result* cannot be before *Date of Sample Collection.*

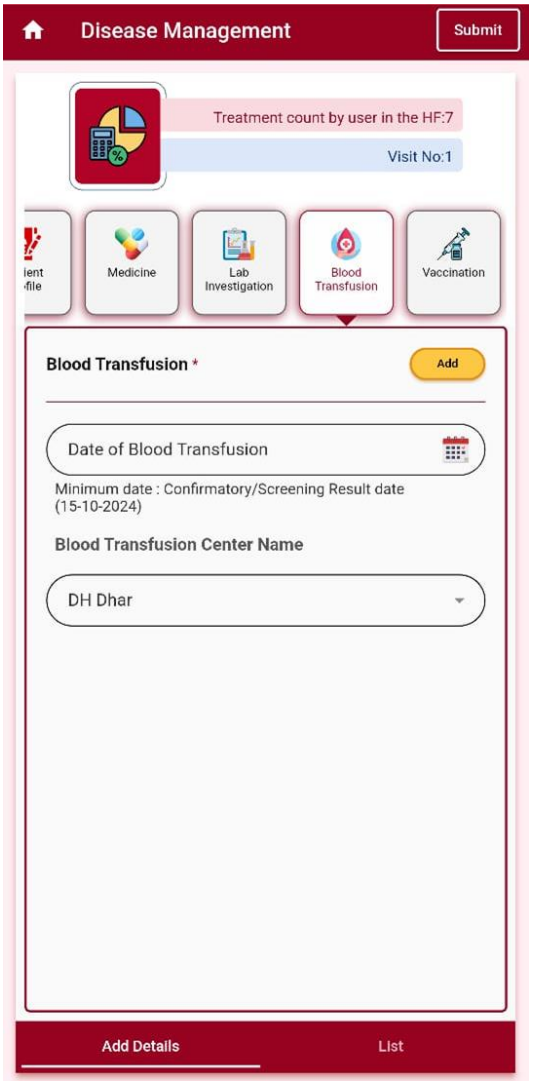


4.11.5. Blood Transfusion

In Blood Transfusion, we record the *Date of Blood Transfusion* along with that, we capture the *Center Name* (default: User's Health Facility Name).

Note:

- Minimum *date of Blood Transfusion* will be the result date of Screening/Confirmatory test entered during beneficiary screening process.

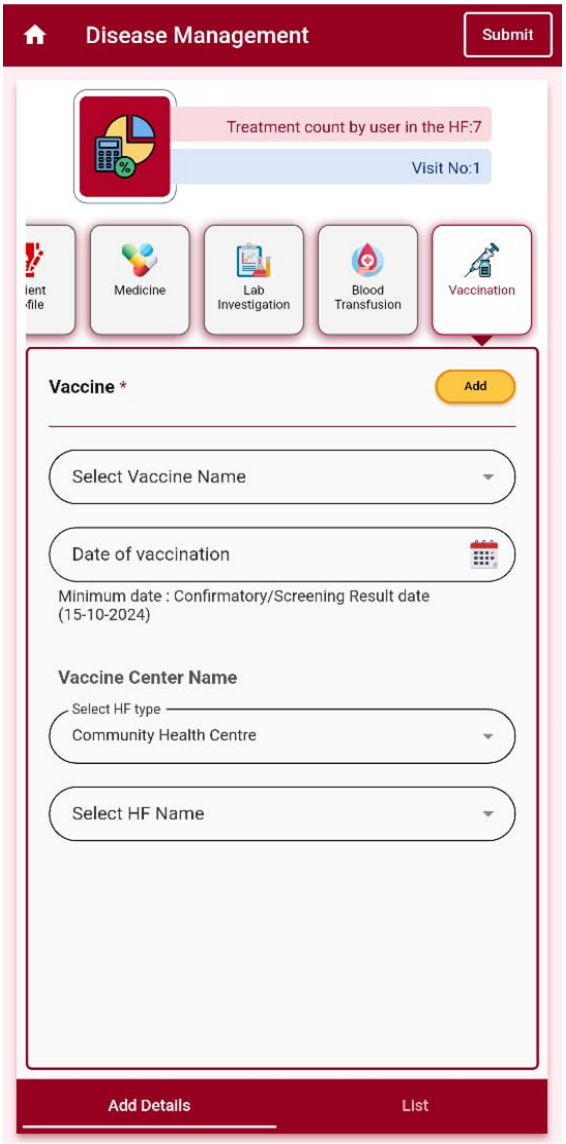


4.11.6. Vaccination

In vaccination, we record the *Vaccine Name* along with its SNOMED-CT Code, *Vaccination Date* and the Dose. Additionally, we capture the *Center Name* (default: User's Health Facility Name).

Note:

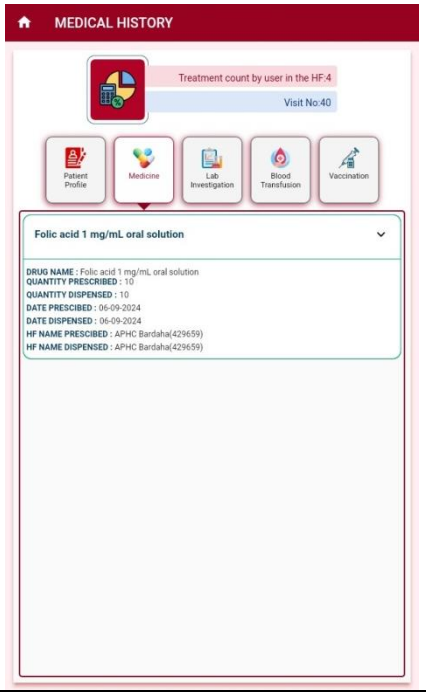
- Minimum *date of vaccination* will be the result date of Screening/Confirmatory test entered during beneficiary screening process.
- The *Date of Next Vaccination* is suggested based on the vaccine name and dose selected to assist with entry.
- If the Last Dose is selected is selected for a specific vaccine, the next vaccine date will not be displayed.
- The *Date of Next Vaccination* is an optional field.



4.12 Medical History

Patient search is open to all HFs can be performed using Sickle ID or ABHA ID, which retrieves a visit-wise list of that patient.

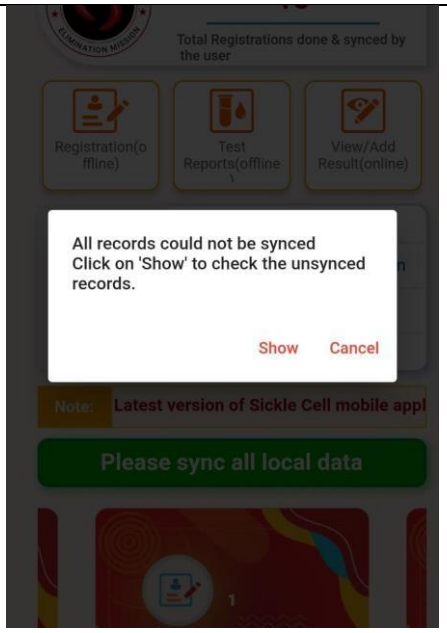
The user can view and monitor the list of *Medicines, Lab Investigation, Blood Transfusion, Vaccines* added during a particular visit by the health facility (HF) user.



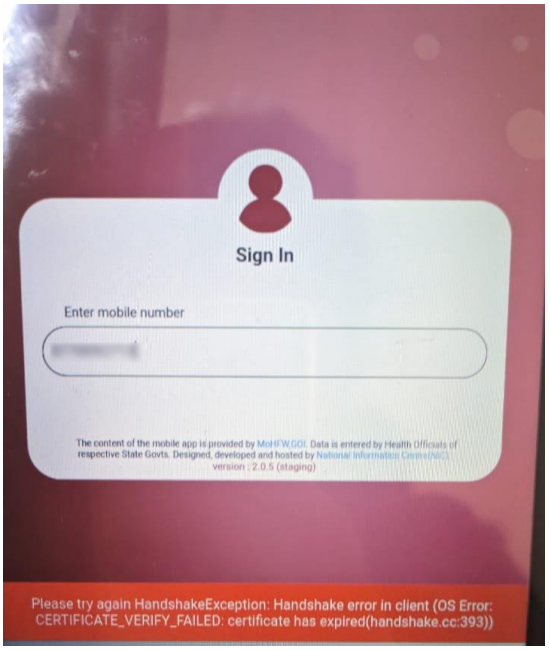
5. Frequent Validation Errors (FVEs) and Frequently Asked Questions (FAQs)

5.1	Syncing error
5.2	Handshake exception
5.3	Developer mode on error
5.4	Mobile number not exist
5.5	Invalid token
5.6	Kindly pull the LGD masters
5.7	Category, Blood Group, LDG Fields are missing
5.8	Registration details & test details already present
5.9	Developer mode and Emulator
5.10	Test Details Blank Fields Error
5.11	Demo Auth Profile Photo no Exists.
5.12	Registration details already exists. Test details needs to enter.
5.13	Sickle ID Missing
5.14	Failed host Lookup
5.15	ABHA Creation/Verification using fingerprint Bio Auth
5.16	ABHA Creation/Verification using Face Bio Auth
5.17	Test detail could not be saved

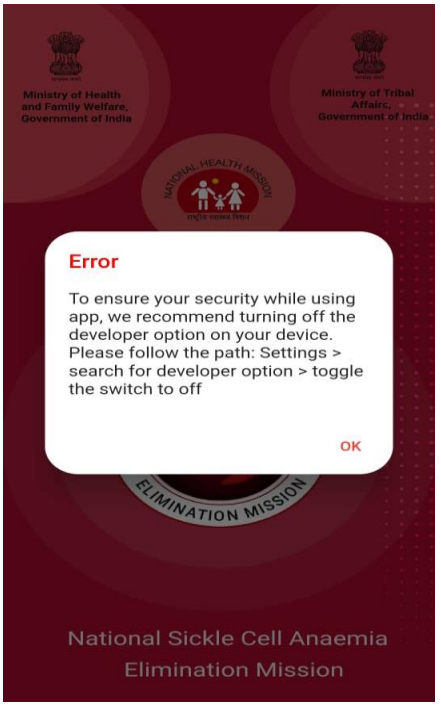
5.1 Syncing error

While Syncing the data user get this error to resolve this error user have to click on show button and then she/he will be able to edit the data. Following are the reasons of this error: • Mobile number already registered with 5 records. • Duplicate Record entered.	

5.2 Handshake Exception

While Login getting this error means your android version is lower than 7 and Sickle cell application not running on version lower than 7.	

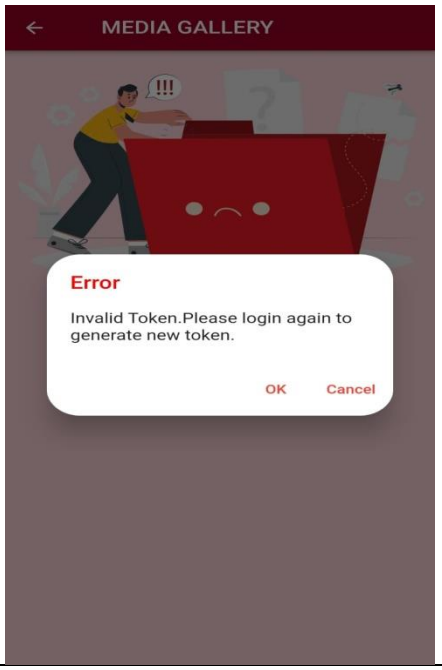
5.3 Developer Mode on error

The application won't work when the developer option is ON.	

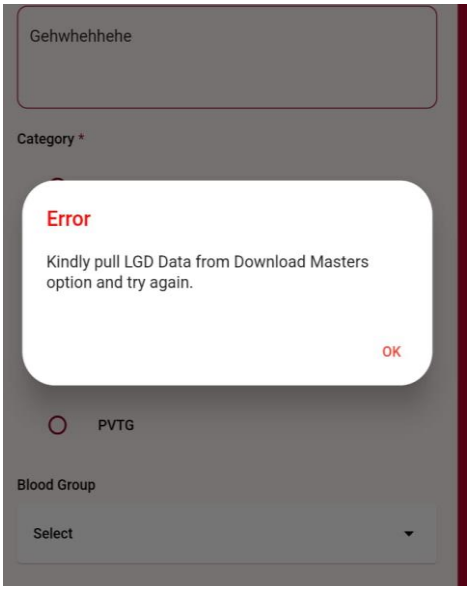
5.4 Mobile number not exist

On Login user get this error and for resolving the user must get her/his mobile number registered through her/his district user, state user or state admin.	

5.5 Invalid Token

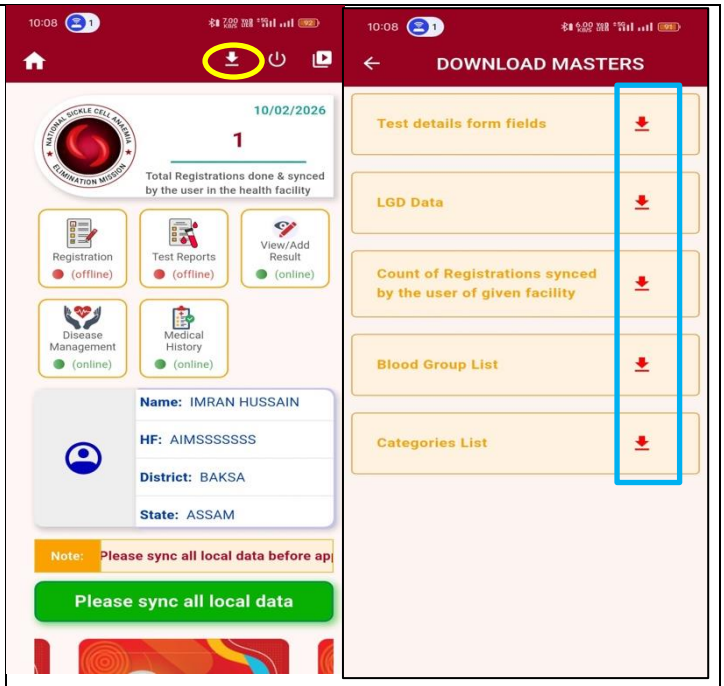
When any Facility user login to another mobile and then try to use the app in old phone then she/he will get this error. Anyone can use this app in one mobile at a time.	

5.6 Kindly Pull The LGD Masters.

The alert suggests that the user has not downloaded the LGD data i.e. state, district, blocks etc.. To fix this, the user may click ok and download the LGD data from master download option.	

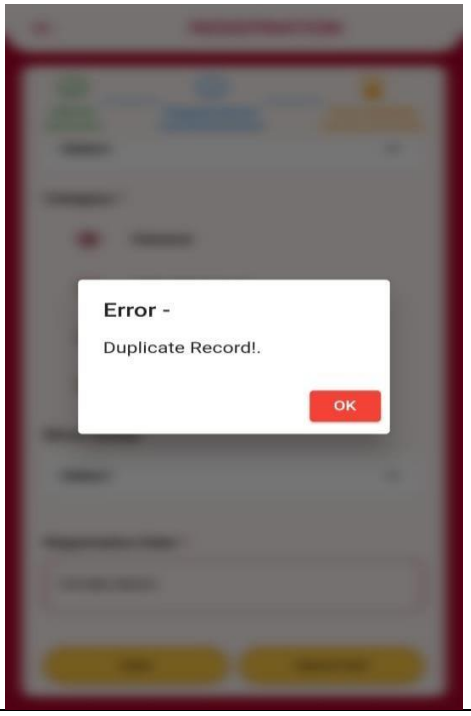
5.7 Category, Blood Group, LGD fields are missing.

If the fields like Category or Blood Group or any LGD field like Block, Village etc. are missing, the user can fix it by downloading required options in "Master Download" module available at Home Screen App-bar.

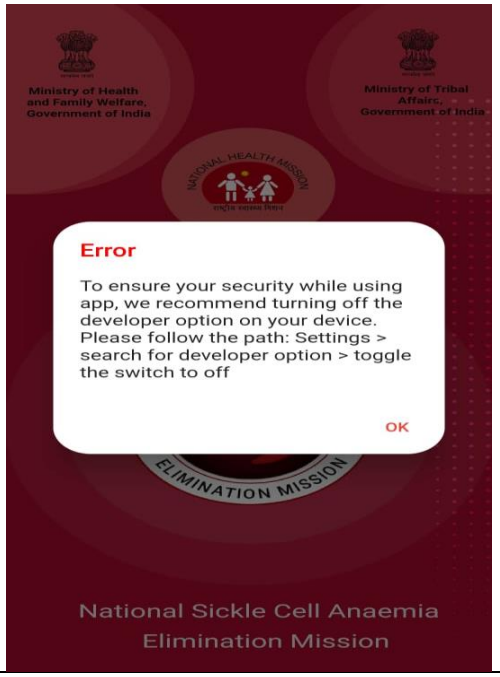


5.8 Registration details and Test Details already present.

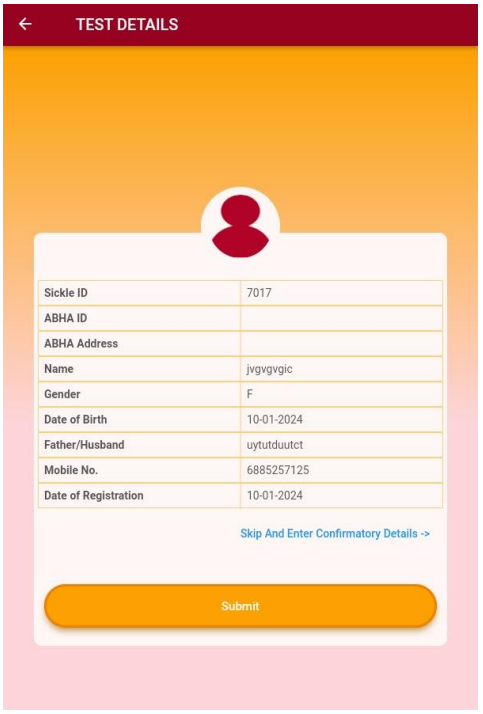
If his/her Registration details and Test Details already present.



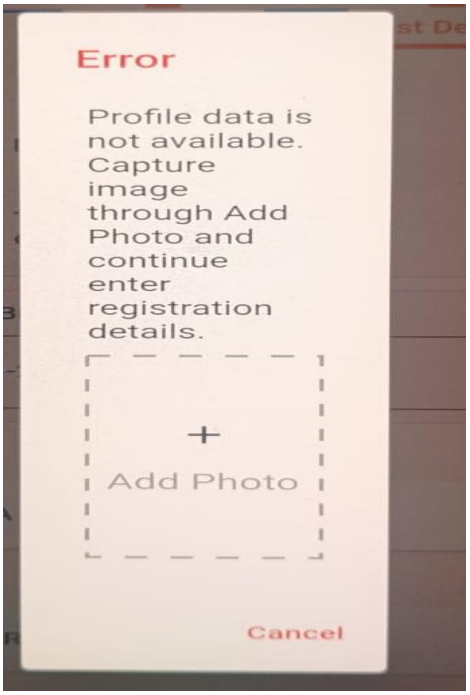
5.9 Developer Mode and Emulators

When the developer mode option is enable on the User's mobile then she/he will get this alert. For the security purpose the user is not allowed to use the application in developer mode.	

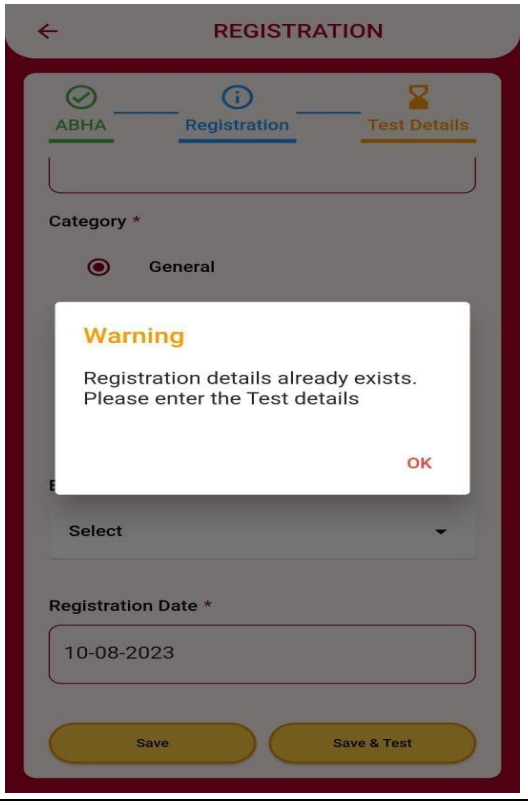
5.10 Ckle cellsiTest Details Blank Fields Error.

When user do not finds any field then she/he have to click on the down arrow of Home screen and pull the 'Test details form fields'.	

5.11 Demo Auth Profile Photo no Exists.

The user gets this error if the profile data of beneficiary is not available with ABDM. The user is then prompted to capture profile and enter other details manually.	

5.12 Registration details already exists. Test details needs to enter.

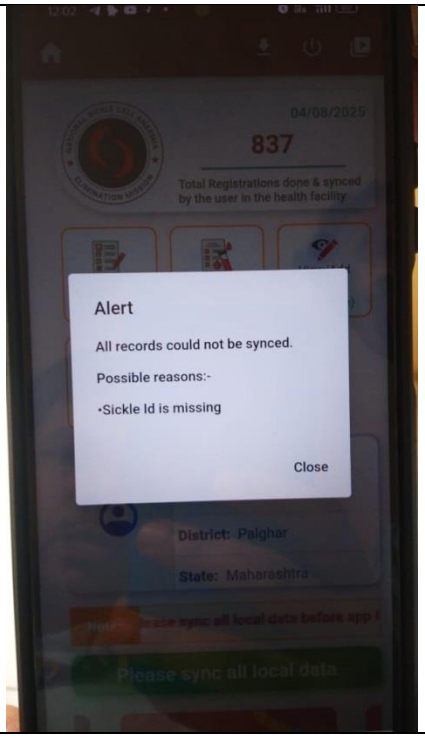
If his/her Registration details already present but the Test details of his/her not present.	

5.13 Sickle ID Missing

To resolve this issue, **Resync each record individually**

- Click to the **'Total Not Synced Registrations'** banner on the app's homepage.
- Click the **'Sync'** button for each registration record individually. (See your app guide, point **4.3.1** for detailed steps.)

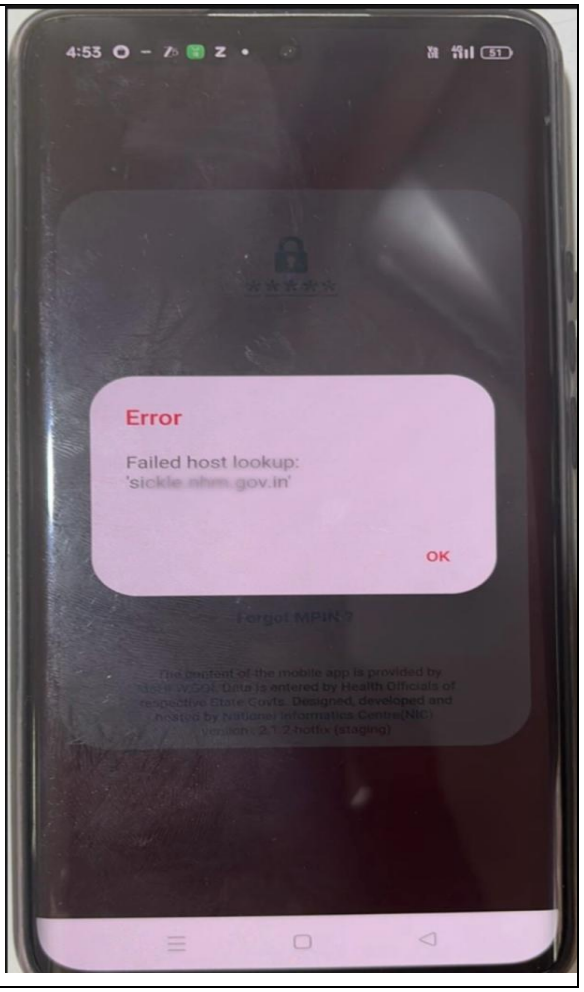
Note: If Sickle ID is still missing, search in **'View/Add Result'** using mobile number or ABHA ID to check if it's synced or not.



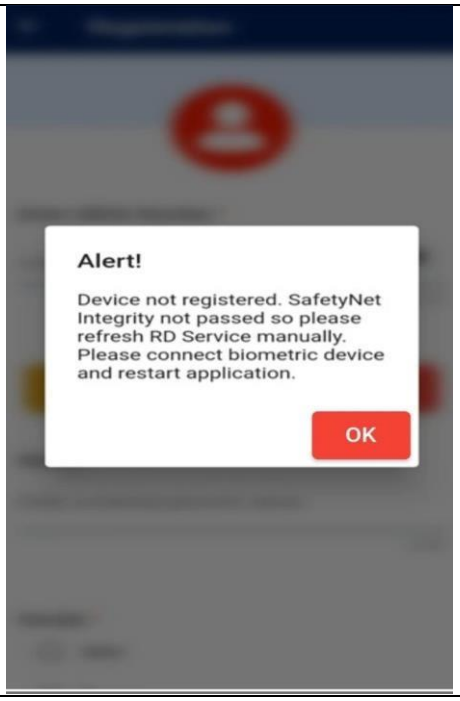
5.14 No Internet

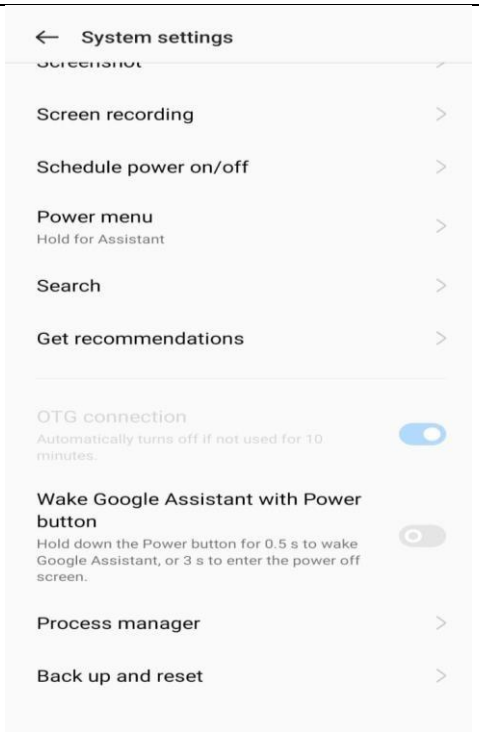
It usually happens in these situations:

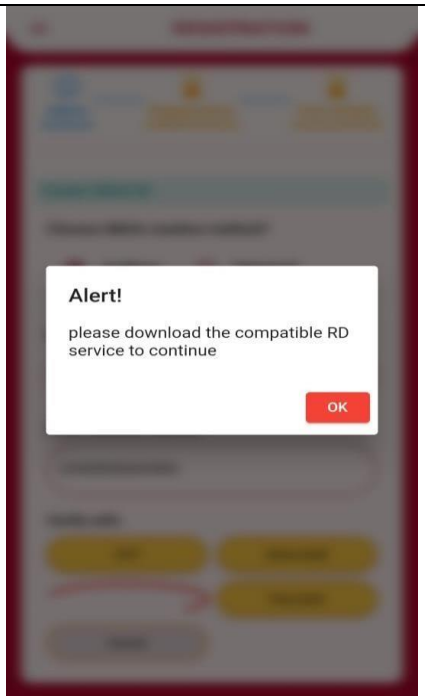
1**. No internet connection**
– Device is connected to WiFi but internet is not working.
2**. DNS problem**
– Network is unable to resolve the domain name.
3**. Server temporarily down**
– The backend server is offline or unreachable.



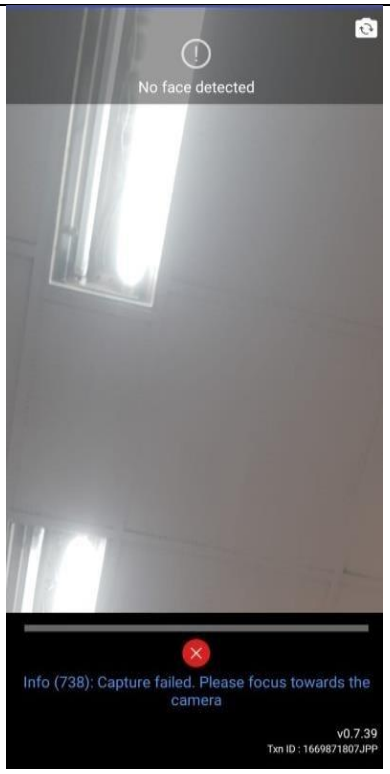
5.15 ABHA Creation/Verification using fingerprint Bio Auth

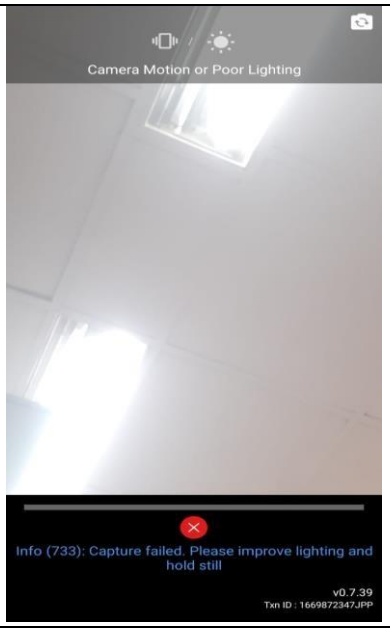
If the user is getting the given alert, then user should disconnect the Biometric device, quit the app, followed by enabling the OTG connection if disabled and reconnecting the device and restarting the app. The user is also suggested to repeat the steps after restarting the mobile if the above steps don't resolve the issue.	

At this point the user has to enable the **OTG connection** from your system's settings.	

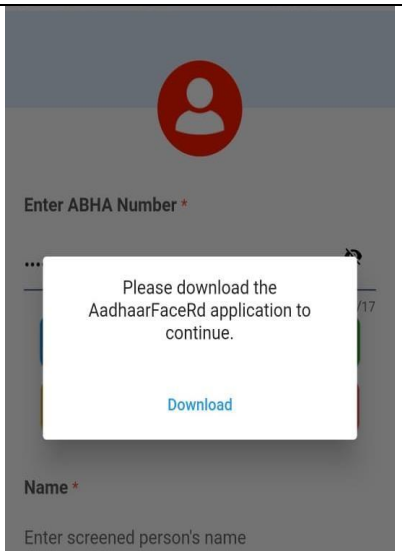
Rd Service not installed, please install from Play Store.	

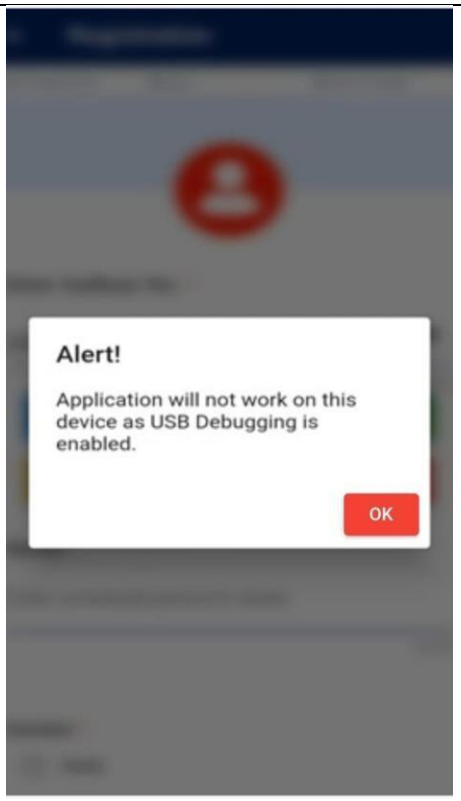
5.16 ABHA Creation/Verification using Face Bio Auth

Please focus towards the camera	

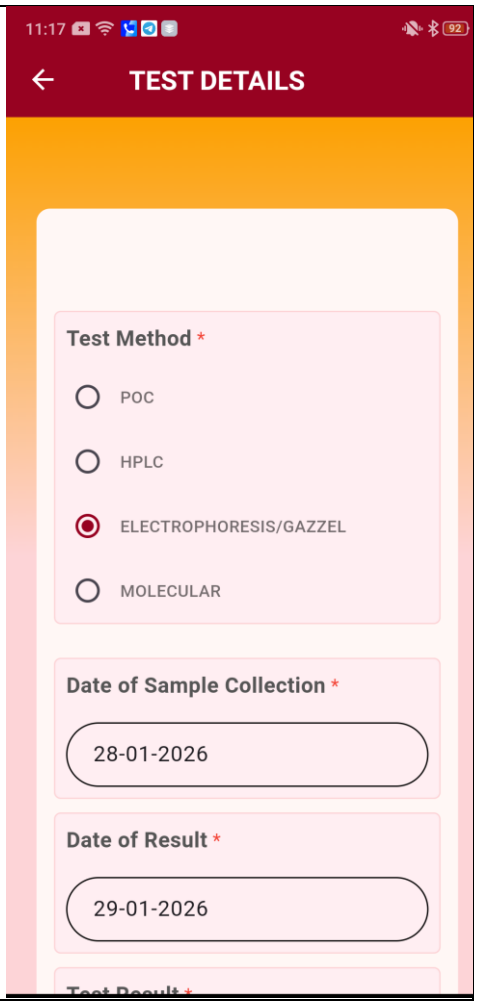
Please improve lighting and hold still	

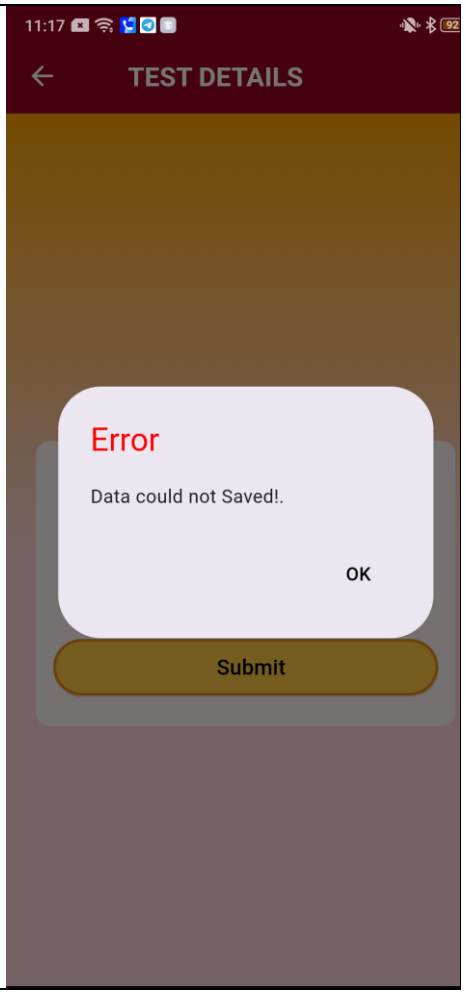
The user should Hold Still and continue blink while capture.	

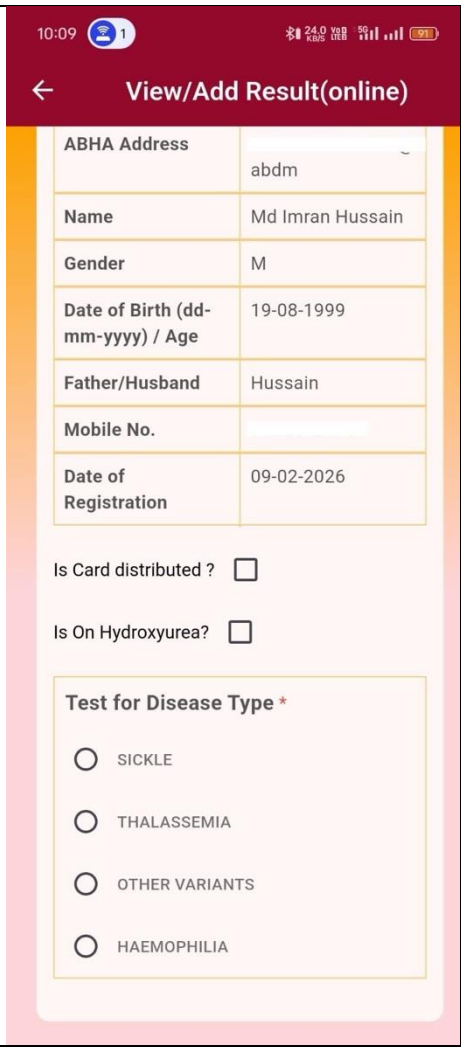
Please download ***theAadharFaceRd*** Service from Play Store.	

Please disable the USB debugging in Mobile Settings while capturing image.	

5.17 Test detail could not be saved

Given the beneficiary (Sickle ID) and disease are same, the user cannot enter revised screening test details if confirmatory test details are already entered. However, the user can enter both screening and confirmatory test details if confirmatory test details are not yet entered.	

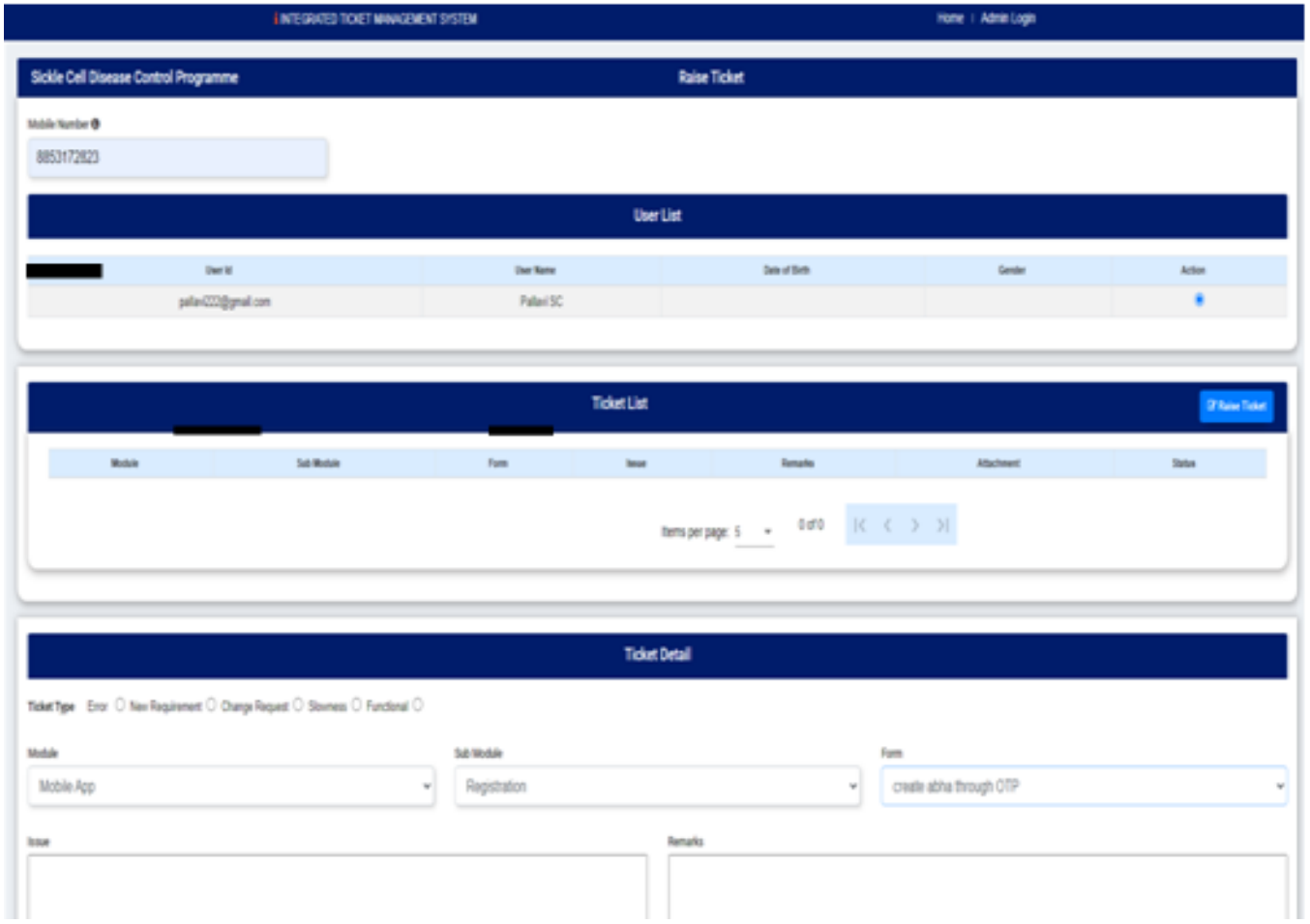
Given the beneficiary (Sickle ID) and disease are same, if the user enters HPLC as the test method and saves the test details, the user is not allowed to enter the test details with any other test method. However, the user can revise other fields such as Test result, subresult, Sample Collection Date etc., keeping test method as HPLC.	

If the user updates “Is On hydroxyurea” status then user is not allowed to enter the revised test result of the beneficiary to “Negative or Carrier”.	

3. Help

- To raise an issue, the user is requested to visit https://sickle.nhm.gov.in/sickle2.0/home and clickon *Raise Ticket* Image on the footer.
- The user will land on iTMS web application, where the user can click on *Raise Ticket* option on top right corner.
- On clicking the *Raise Ticket,*The user can give the mobile number followed by OTP verification.
- Click on *Action* Radio Button and click *Raise Ticket.*
- Select *Mobile App* in *Module,* select Sub Module and Form, enter issue, attach supporting file and submit.

iTMS
Integrated Ticket Management System
Total Tickets 0
PENDING Tickets 0
REJECTED Tickets 0
RESOLVED Tickets 0


INTEGRATED TICKET MANAGEMENT SYSTEM
Home | Admin Login
Sickle Cell Disease Control Programme
Raise Ticket
8853172823
User List
Ticket List
Ticket Detail
Mobile App
Registration
create abha through OTP