

# User Requirements Document for:

## JOZI COPC A DIVISION OF WITS HEALTH CONSORTIUM (PTY) LTD - Phase 1

### What is needed?

- A mobile module that:
  - **Maps the community (Phase1)**
  - **Registers families( Household Assessment) (Phase1)**
  - Screens individual residents (Individual Assessment) (Phase2)
  - Can do repeat visits (Phase 2)
  - Can do modular extensions as per need (Phase 3)

### Why is it needed?

- To register households as a whole and identify risks within a household based on individual assessments.
- To demonstrate integrated practice from COPC to health facility.
- To generate informed referrals for individuals to health facility.
- To track cost effectiveness of COPC.

### Background

Jozi Family Medicine has an existing web based solution for Health Facilities. This solution was developed by Healthbridge and is currently implemented at (n) health facilities. In this web based solution: families and their individuals are registered and linked to a specific household location. It continues to assess the health status of each individual with a number of screening questions. There is a need to expand this solution by empowering community health workers (CHW's) with mobile monitoring tools.

## Terms and Acronyms

CHW	Community Health Worker
PHC-TL	Primary Health Care Team Leader
Admin	Administrator
Jozi COPC	Johannesburg Community Orientated Primary Care
ICPC	International Classification of Primary Care
OVC	Orphaned and vulnerable children

## Process Overview

There are 5 steps

**PHASE 1:** A) Mapping the Community B) Household assessment (Registering the Family), Support

**PHASE 2:** C) Individual Assessment (Screening individual residents) D) Follow-up visits

**PHASE 3:** E) Modular extensions per need

### Document navigation:

1. Questions to be asked or comments to be made by CHWs will be in **bold** and indicated in **GREEN**
2. Instructions to CHW will be in **bold** and indicated in **BLUE**
3. Tasks for CHWs will be in **bold** and indicated in **RED**

# Mandatory Use Case

## R02U01 - CHW selects “Mapping the Community”

CONTEXT: CHWs go along streets GPS-ing each address with address details in that street. It includes identifying any which are of public interest, categorising it (eg school etc), and then adding a picture and details/comments to this.

CHW selects “Mapping the community” on the application main menu.

**“Please select the street”** (Drop down list - preloaded, and “free text”)

- Street name / Lot no. (Pre-loaded - (insert the names of the streets on the web portal)
- Street no. / Stand no. (“Free text”)
- Flat name/ Flat no. / Unit no . (Additional fields - “Free text”)
- Suburb / Township / Settlement (Pre-loaded - (insert the names of the streets on the web portal)

**Message on screen: “Take GPS at street entrance of address”**

Phone’s GPS appears in application. Will give the CHW a message if they captured a good reading. After 2 minutes, if no reading is captured (due to signal, low battery) →

Message on screen:

**“Please note, no GPS reading could be captured at this moment. This household will be listed under ‘My Tasks’ and you will be requested to register the GPS reading for this household within 2 weeks.”**

After GPS...

**“Is this a place of public interest?”** (Yes/No)

If Yes

- **“Please categorise the address”** (Health / Education / Safety / Business / Recreation / Social Support / Other)
- **“Please take pictures of the places and its surroundings”** (multiple pictures)
- **“Please name this place”** (Free text) (loop for number of pictures taken)
- **“Please add a comment or describe this place”** (loop for number of pictures taken)
- **“Please add the name and contact details - optional”**

**The Environmental Concerns (R02U02) will first be done during the mapping phase, but will be part of an on-going assessment.**

## R02U02 - CHW selects “Environmental Concerns”

CONTEXT: The CHW will select Admin and then Environmental Concerns on the mobile. Similar to mapping → take pictures of a hazard on street (example pot hole, broken lamp etc.. → “free text” comment and site GPS capture) info send to EHO (flag to EHO (and email to EHO) -- on web portal)

CHW selects “Admin” on the application main menu.  
CHW then selects “Environmental Concerns” on the application sub menu.

**Message on screen** → **“Please take picture of concern”** (multiple pictures)

**Message on screen** → **“Please Select a Category”** (drop-down list)

[water; sanitation; electricity; refuse; structural problems]

**Message on screen** → **“Please add a comment”** (“free text”)

**GPS will take the reading in the background and GPS address will be saved to the concern.**

## R02U03 - CHW selects “Support”

CONTEXT: When the CHW log a support message, the message should be logged on the web portal and the web portal will send an SMS notification to the supervisor. (Note, this message might take several minutes even hours if there are no signal with the store and forward function → once the device is back in signal the message will be delivered)

CHW selects “Admin” on the application main menu.  
CHW then selects “Support” on the application sub menu.

**Message on screen** → **“Please report your support message”** (“free text”)

## R02U04 - CHW does “Household Assessment”

CONTEXT: CHWs go back along streets checking on each GPS-ed address and knocking on doors of each household, interviewing a member of the family they find at home to register the family.

CHW selects “Household Assessment” on the application main menu.  
CHW then has the option to search the household by Address.

**“Search”: CHW selects “Search by address”**

Drop-down list of all the registered households appear on the screen, and “free text” option to search for the address name.

Filtered alphabetically according to:

- Street name / Lot no.
- Street no. / Stand no.
- Flat Name / Flat no. / Unit no.
- Suburb / Township / Settlement

Message on screen: **“Please select the address of the family you wish to register.”**

**“Do you want to register the family in this program?”** (Yes/No)

If Yes → continue with **Consent questions** and capture **signature on the touchscreen phone**....

If no signature of consent, then end with message on screen: **“Cannot continue”**

If consent signed → Continue then with questionnaire.

If No → **“Is there any reason why this family can’t be registered?”**

(There is no one home / They refused / They are busy)

- If “They are busy” [Make a new appointment -> **Enter date of appointment** -> Date of follow-up automatically listed under **“My Tasks”**]
- If “They refused” [Flag a date in three months -> Date of follow-up automatically listed under **“My Tasks”**]
- If “There is no one home” [Flag a date in two weeks -> Date of follow-up automatically listed under **“My Tasks”**]

See R02U05 for “My Tasks” definition. *CONTEXT: **My Tasks** → can’t be deleted and must be completed. The CHW has two tries to complete the task after which the CHW Coordinator is notified via the web portal/email notification of the two failed attempts (Flag).*

## **HOUSEHOLD ASSESSMENT: Demographics**

**CONTEXT:** The CHW, continuing the interview with this one member of the family they find at home, enquires about each member of the family starting with the interviewee.

1. **“How many people in the family stay in this house permanently (at least 4 nights per week)?”** (Number, compulsory)
2. **“What is your first name?”** (Compulsory Free text)
3. **“What is your surname?”** (Compulsory Free text)
4. **“What is your age in years?”** (Compulsory free text: Validate for 1-120)

**Message on screen: “Please tell me more about each member of the family”**

5. **“What is their first name?”** (Compulsory Free text)
6. **“What is their surname?”** (Compulsory Free text)
7. **“What is this person’s age in years?”** (Compulsory free text: 0-120)  
[Loop for number of people indicated as staying at this house permanently in “1”. Application to guide CHW so that they register the total amount of people staying at this address. The person being interviewed will be automatically included in the number of people already registered]
8. **“Who is the head of the family?”** (Present list of registered people. **Select a person.** Then ->) (Flag if under 18 years: OVC registration as a task)
9. **“What is the cell number of the head/acting head of the family?”** (Compulsory free text, 10 digits)
10. **“Is there a land line in the house?”** (Yes/No)  
If Yes → **Enter Number with local code**
11. **“Is the family covered by medical aid?”** (Yes / No)  
If Yes (partly / fully)
12. **“What is the family name you choose for the COPC programme?”** (Free text) (Should be unique on the database. So need to validate on the database when CHW entering the family name)  
  
**Message on screen: “Please remember this family name as it is your reference when you make appointments to see the COPC team at the clinic”.**  
**CHW clicks “OK”.**

## **HOUSEHOLD ASSESSMENT: Living Conditions**

**Message on screen: “Can you tell me more about living conditions?”**

13. **“How would you describe this place you live in?”** (Plastic/Cardboard / Mud / Bricks/Cement blocks / Corrugated iron / Other (Specify with free text))
  14. **“What are your main sources of fuel in cooking, heating and lighting?”** (electricity for all; electricity for cooking and lighting; electricity for lighting only; no electricity)
  15. **“How many rooms does the family sleep in?”** (Compulsory number) [compute ‘crowding’ with number of people divided by number of rooms] If  $\geq 4$  → Popup at end for **CHW to Counsel on Crowding**
  16. **“How many families live at this address?”** (Number). If there is more than one then Popup after counseling done **“Do you want to register the other family/ies at this address?”**
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17. “What is the type of Toilet?” (flush / non-flush)

18. “Is the toilet shared with another family?” (Yes / No)

If Yes → Popup at end for **CHW to Counsel on Toilet Care**

19. “What is the type of Water Supply?” (inside house / outside house but inside yard / outside the yard) If outside house but inside yard / outside the yard → Popup at end for **CHW to Counsel on Water Supply**

20. “What is the type of Refuse Removal?” (None / own removal / removed by municipality)

If None / own removal → Popup at end for **CHW to Counsel on Refuse Removal**

21. “Are there any problem with the house or the building, or on the property or in the street?” (Yes/No)

If Yes → (Free text) Flag for EHO

## HOUSEHOLD ASSESSMENT: Priority Issues

*Message on screen: “I would like to ask you some question that you might find sensitive. You do not have to answer these questions if you don’t want to. ”*

22. “How many people in this family have died in the past year?” (Number)

If >0 then

- “What was the person’s age?” (Number – years / months / weeks / days)
- “Why did this person die?” (Free text)
- “Was this death related to pregnancy up to 6 weeks after delivery?” (Yes/No)

Do this for each then click “Done” to continue with questionnaire.

23. “In this family does anyone have HIV?” (Yes / No / Don’t Know)

If “Yes/ Don’t Know” – Schedule for CHW **priority screening** in “My Tasks”

24. “Does anyone have TB?” (Yes / No / Don’t Know)

If “Yes/ Don’t Know” – Schedule for CHW **priority screening** in “My Tasks”

25. “Does anyone have a Psychiatric Problem?” (Yes / No / Don’t Know)

If Yes “Is she/he on treatment?” (Yes/No) If Yes “Is she/he taking it regularly?” (Yes/No) If No → Schedule for CHW **priority screening** in “My Tasks”.

26. “Does anyone smoke?” (Yes / No / Don’t Know)

If Yes → Schedule for CHW **priority screening** in “My Tasks”

27. “Does anyone have an Alcohol Problem?” (Yes / No / Don’t Know)

If “Yes/ Don’t Know” then **Flag for clinic follow up**

28. “Has anyone been a victim of Domestic Violence?” (Yes / No / Don’t Know)

If “Yes/Don’t Know” then **Flag for clinic follow up**

**29. “Does anyone have a Drug Problem?”** (Yes / No / Don’t Know)

If “Yes/Don’t Know” then **Flag for clinic follow up**

**30. “Has anyone in this family been to hospital in the last year”** (Yes / No)

If Yes → Schedule for CHW **priority screening** in “My Tasks”

**31. “Does anyone in this family have one or more of the following chronic conditions”**

**Tick each condition mentioned**

- Hypertension (High blood)
- Diabetes (Sugar sickness)
- Heart disease
- Asthma
- Arthritis
- Epilepsy

(Yes / Don’t know should be reported separately for questions above)

## **R02U05 - CHW selects “My Tasks”**

**CONTEXT:** “My Tasks” -> can’t be deleted and must be completed. The CHW has two tries to complete the task after which the PHC-TL is notified via the web portal/email notification of the two failed attempts. (If they can’t complete a task the first time, they should reschedule the task, after the second time the task will be sent to the PHC-TL as incomplete task)

- Main menu item for “My Tasks”
- CHW selects it.
- The priority screening will be listed first on the list due the highest priority.
- Tasks on mobile menu - message on screen : start with heading example “Counselling for...” so that similar tasks stay together in the menu. (See below -- Reminder for CHW : Counselling”
- The CHW should have a date picker for each task for followup, or option to select complete



## REMINDER FOR CHW: Counselling

### 1.1 **Counsel on the following:** (Present list of popups)

Question	Task
1.1	<b>CHW to counsel on Crowding</b>
1.2	<b>CHW to counsel on Toilet Care</b>
1.3	<b>CHW to counsel on Water Supply</b>
1.4	<b>CHW to counsel on Refuse Removal</b>

**“Did you do counseling on** (Present list of popups) – (Yes / No per topic)

If there is no time to counsel → Make a new appointment → **Enter date of appointment** →

Date of follow-up automatically listed under **My Tasks**

1.2 **“Do you want to register the other family/ies at this address?”** (Yes/No)

If no →

1.2.1 **“Do you want to make an appointment?”** (Yes/No)

If Yes → Make a new appointment → **Enter date of appointment** → Date of follow-up automatically listed under **My Tasks**

If No → Flag a date in two weeks → Date of follow-up automatically listed under **My Tasks**

## R02U06 - CHW adds a new member to the family (Phase 1 +2)

**Context:** CHW arrives at a household they already registered. It becomes clear that they didn't register a certain household member during the “Household Assessment” stage. They then select the “Add a family member” option on the application main menu.

→ Search options:

Search by family address. (Free text)

Search by family name. (Free text)

→ Show list of options (Household addresses). Select one.

Message on screen: **“You have selected the following family: (Family name) + (Family address). Do you want to add a new family member to this family?”** Y/N (No --> go back to list of options)

Yes →

1. “How many people in the family stay in this house permanently (at least 4 nights per week)?” (Number from initial registration --> able to edit it, compulsory)

*Message on screen: “Please tell me more about this member of the family”*

2. “What is their first name?” (Compulsory Free text)

3. “What is their surname?” (Compulsory Free text)

4. “What is this person’s age in years?” (Compulsory free text: 0-120)

## R02U07 - CHW Explain the way forward

### REMINDER FOR CHW: Explain process

#### 7.1 Explain the following:

- The family will be allocated later to a specific CHW
- S/he will call on you to schedule a convenient time to screen this family.
- The family can access clinic services using the COPC service
- Each person must present their barcode at the clinic when accessing the COPC service.

#### 7.2 Provide a pamphlet with COPC details and contact numbers

## R02U08 - CHW views “My Performance”

**Context:** My Performance – CHW able to view number of registrations he/she did and compare it to the average of all CHWs in their Ward

CHW selects “Admin” on application main menu --> Then selects “My Performance”.

## R02U09 - CHW-TL to view flag for clinic follow up

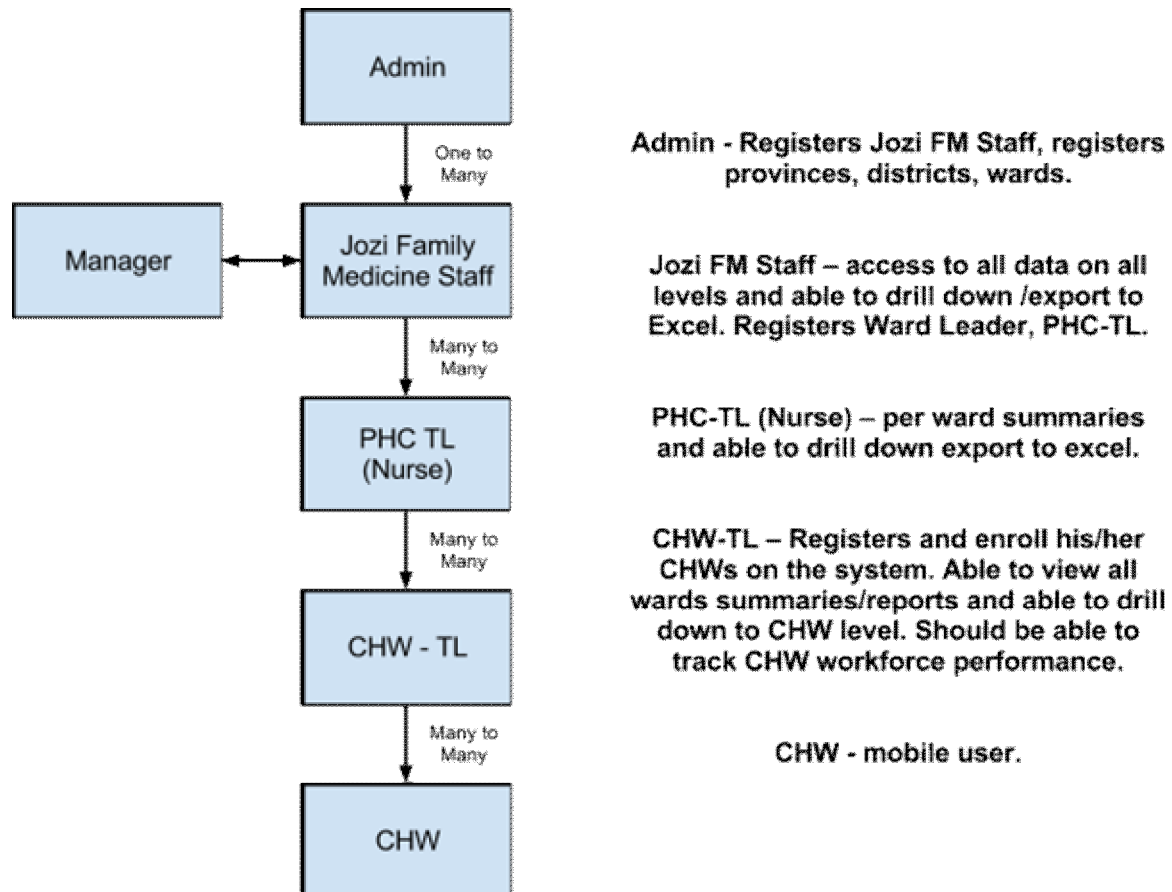
**Context:** CHW-TL log in to system and get a report of all the clinic follow ups

CHW - TL will see the list of clinic follow-ups

## **Mobile Application main menu**

<b><u>Main menu</u></b>	<b><u>Sub menu</u></b>
<b>Mapping the community</b>	
<b>Household Assessment</b>	Search by address
<b>My Tasks</b>	
<b>Add a family member</b>	Search by family address
	Search by family name
<b>Admin</b>	Support
	My Performance
	Environmental Concerns

## Entity relationship (Roles)



## Reports

### Laptop Access for Reports

- Admin/Jozi FM Staff, Manager – laptop user – as below + access to maintenance for users and areas
- PHC-TL/Clinic staff – laptop user – as below + generating reports for areas and access to data and editing only for pre-determined area by Admin.
- CHW -TL - Laptop user and mobile user – as below + generating of reports for his/her team/area
- CHW – mobile user – online app

**Maps of each category (4) and a fifth map combining all of the maps (nice to have).**

Summary totals

- Public interest addresses categories – able to be drilled down to produce lists with names with comments.
- Streets addresses - be able to be drilled down to produce lists with names / surnames / addresses / cells.
- The summary totals needs to be per CHW, Ward and All.

Summary Reports should include:

- **Places of public interest (Table with count and printable map) - > click on colour to get more detail.... Include key, descriptive header)**
    - o No. Health – Red cross
    - o No. Education -Orange
    - o No. Safety -Blue
    - o No. Business - Yellow
    - o No. Recreation - Green
    - o No. Social Support - Pink
    - o No. Other – Purple
  
  - **Families registered (Table – Ward based with each section or team?)**
    - o No. of addresses registered (Mapped out – include detail of address when user clicks on orange dot)
    - o No. Families registered (table of count, Mapped out – green for registered family at an address and orange for address with no families registered yet).
    - o No. Families refused
    - o No. Families busy,
    - o No. Families not available
    - o No. Families totally
    - o No. of individuals registered totally
    - o No. Families on Medical Aid (fully/partly)
  
  - **Health Profile (one map, 5 entries colour coded – multiple choice)**
    - o No. of Families with OVC-headed households
    - o No. of Families with Deaths>0
    - o No. of Families with Pregnancy-related Deaths>0
    - o No. of Families with deaths of children <1yr
    - o No. of Families with deaths of children <5yr's
    - o No. of Families with HIV - map
    - o No. of Families with TB - map
    - o No. of Families with Mental Illness
    - o No. of Families with Smoking
-

- No. of Families with Alcohol Problems
- No. of Families with Domestic Violence
- No. of Families with Drug Problems
- No. of Families with more than 4 Children under 5yrs
- **Living conditions**
  - No. of Families with Overcrowded
  - No. of Families with Housing Type - Plastic/Cardboard / Mud / Bricks/Cement blocks / Corrugated iron / Other
  - No. of Families with Fuel Source - electricity for all / electricity for cooking and lighting / electricity for lighting / no electricity
  - No. of Families with Toilets - flush / non-flush / shared
  - No. of Families Counselling on Toilet care
  - No. of Families with Water Supply - inside house / outside house but inside yard / outside the yard) If outside house but inside yard / outside the yard
  - No. of Families Counselling on Water Supply
  - No. of Families with Refuse Removal - None / own removal / removed by municipality
  - No. of Families with Environmental Problems

**Clinic follow-up reports.**

- List of all clinic follow-ups : (yes / don't know) listed separately for this report

**Workforce management: Date picker**

- Time spent interviewing (just registrations),
- number of mapping the community, (number of addresses mapped)
- number of registrations, (household assessment)
- Non work time(travel etc..)

## Accepted for Implementation:

On behalf of WITS HEALTH CONSORTIUM (PTY) LTD:

Name \_\_\_\_\_

Job Title \_\_\_\_\_

Date \_\_\_\_\_

Location \_\_\_\_\_

Signature \_\_\_\_\_

On behalf of GeoMed Ventures (PTY) LTD:

Name \_\_\_\_\_

Job Title \_\_\_\_\_

Date \_\_\_\_\_

Location \_\_\_\_\_

Signature \_\_\_\_\_