Southern African HIV Clinicians Society

3rd Biennial Conference

13 - 16 April 2016
Sandton Convention Centre
Johannesburg

Our Issues, Our Drugs, Our Patients

www.sahivsoc.org
www.sahivsoc2016.co.za

"National Health Laboratory Service's use of Technology"

Lynsey Isherwood, MSc.(med)

mHealth Programme Manager & Medical Scientist

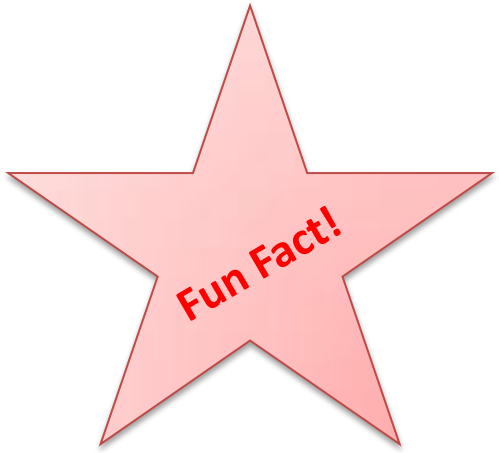
National Priority Programmes, NHLS

SOUTH AFRICA

http://www.cmo.com.au/article/564904/digital-disruption-isn-t-disruption-anymore-why-it-time-refocus-your-business/

A "buzz-phrase" to describe the impact of new innovations and technologies across all industries and sectors.

At an **Innovations Dinner**, hosted by Business Connexion, Telkom and Deloitte on 25 November 2015, it was predicted that the ***healthcare sector would be the most affected by Digital Disruption*** whilst the financial institutions will be the most stagnant.



Did you know?

By 2020, every person in this world will be connected to at least 4 devices, each!

STRATEGY ANALYTICS
Research, Experts, and Analytics

~ 7,7 Billion World Population in 2020 x 4 Devices = ~ 30.8 Billion Connected Devices

With compliments: Lynsey Isherwood

2016

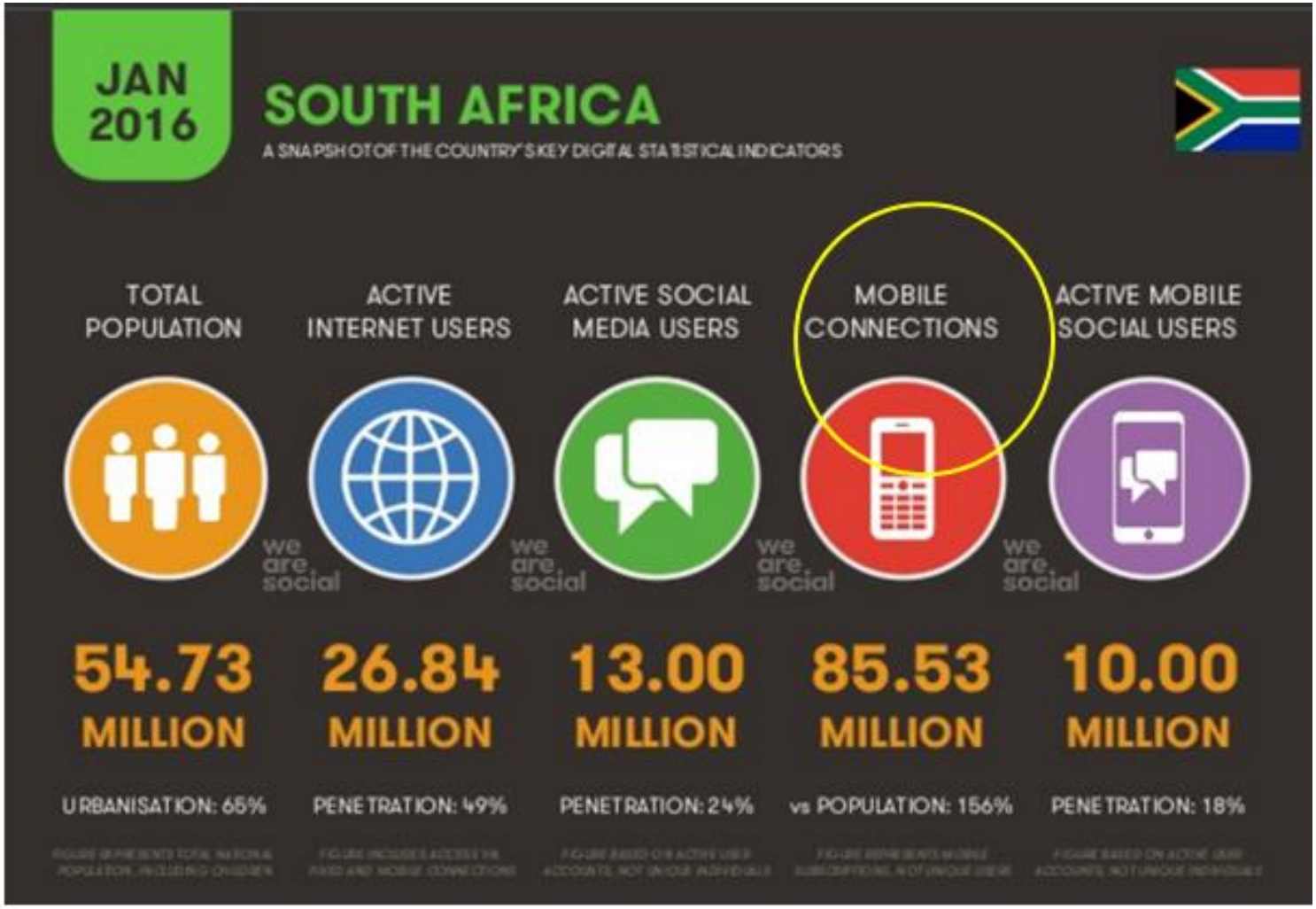
"Today, we co-exist in a world of connectivity with disconnected humanity"

Lynsey Isherwood, MSc.(med)

Meaningful connection to patients/clients

With compliments: Lynsey Isherwood

Mobile Connectivity: South Africa……..



Source: http://www.slideshare.net/wearesocialsg/2016-digital-yearbook/198

Order of Presentation

- **Two TB Linkage-to-Care solutions**
  - **TreatTB (and TreatTB Notify)**
  - **miLINC**

- **Randomised, Controlled Study (linkage-to-care: newly diagnosed HIV patients)**
  - **SmartLtC**

m-Health solution to improve timely linkage to care and treatment for

Rifampicin resistant clients identified by GeneXpert technology.

PEPFAR

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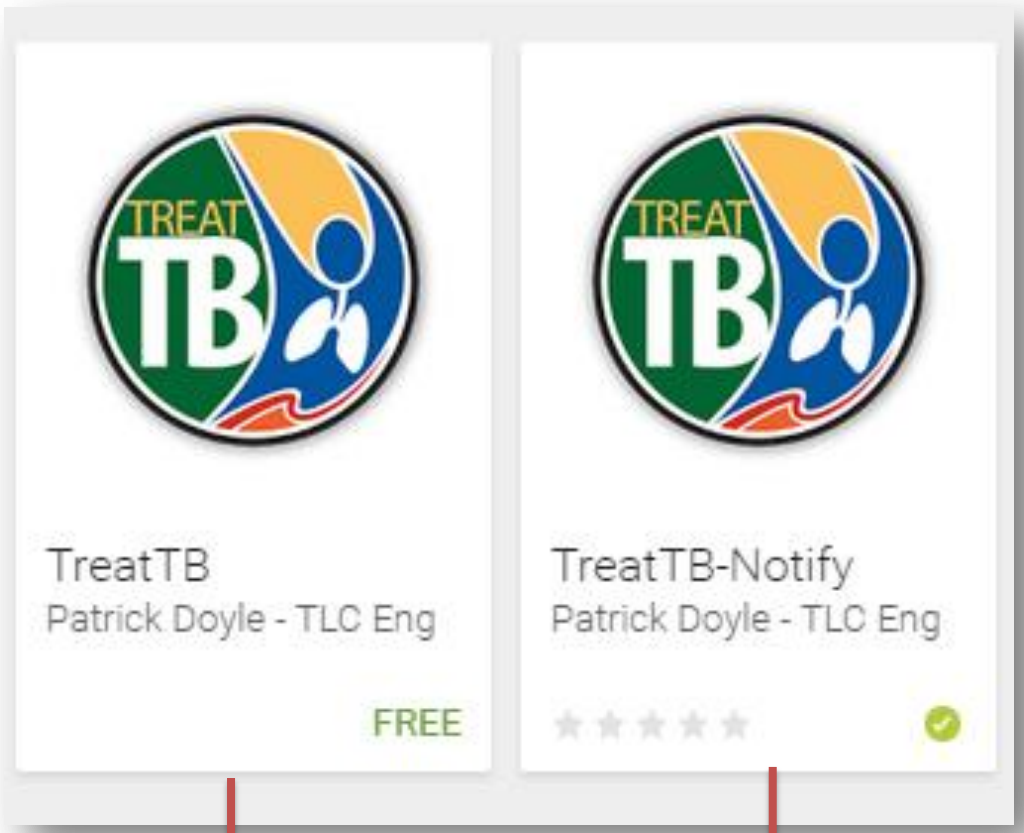
Department:
Health
REPUBLIC OF SOUTH AFRICA

NATIONAL HEALTH
LABORATORY SERVICE



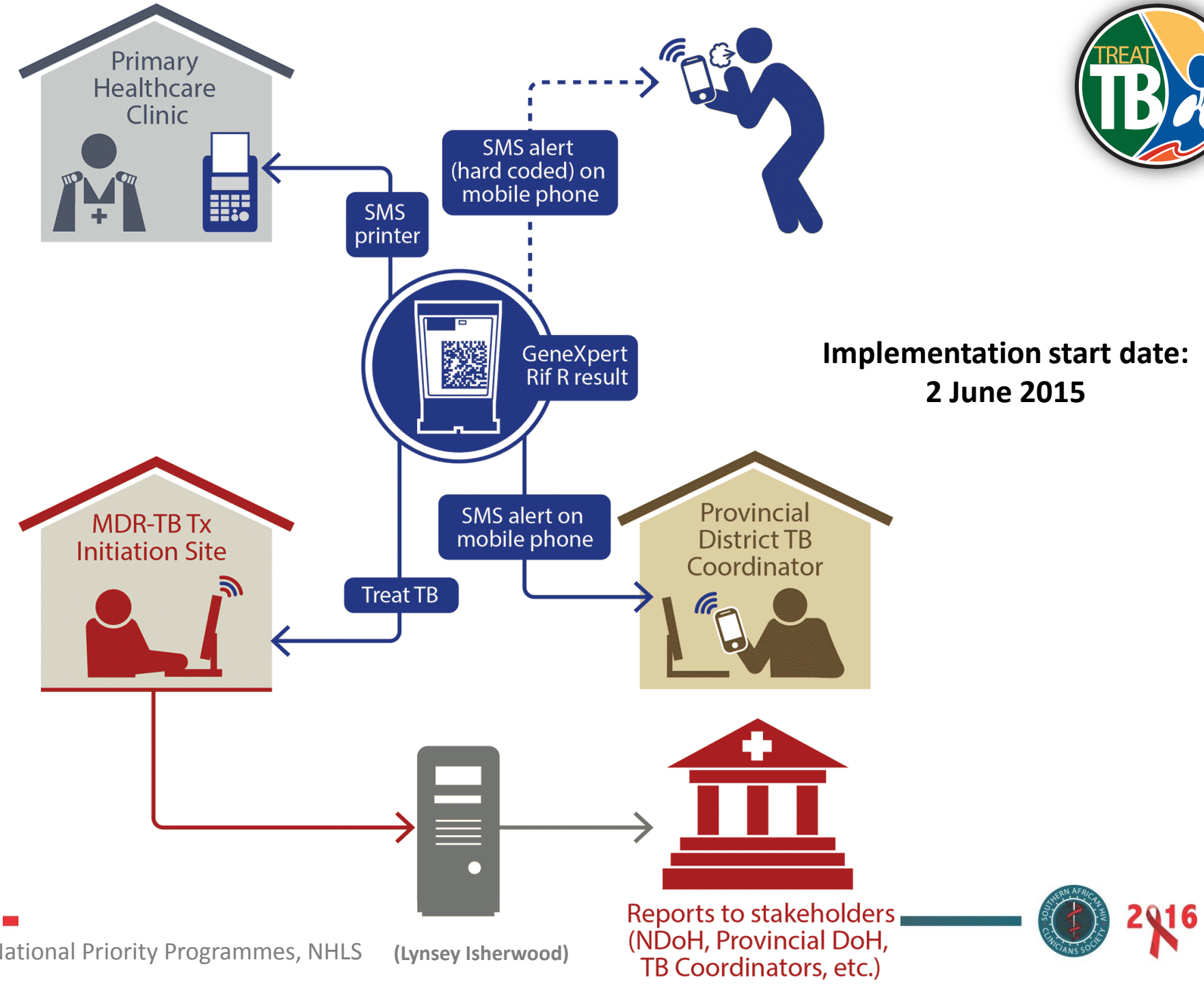
ANDROID APP ON Google play

Two different apps

MDR-TB Treatment Initiation Facility

DoH TB Coordinators Municipality Coordinators

With compliments: Lynsey Isherwood



Implementation start date: 2 June 2015

(Lynsey Isherwood)

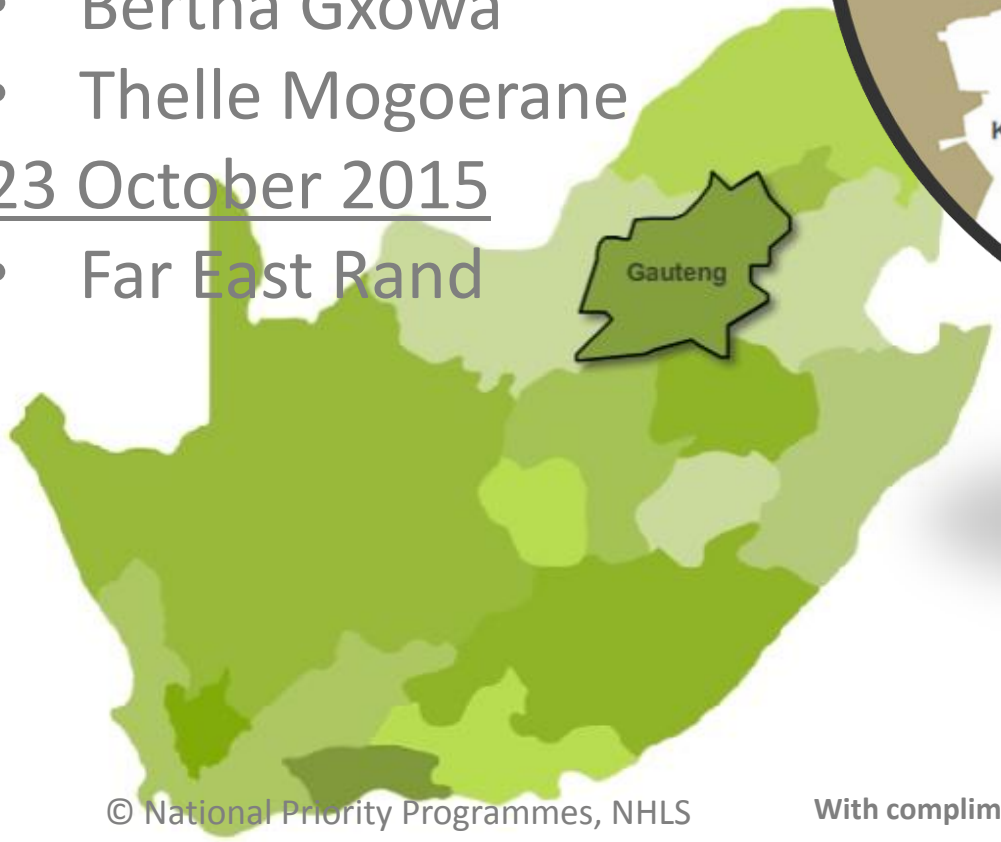
Pilot Locations

2 June 2015

- Tembisa
- Pholosong
- Bertha Gxowa
- Thelle Mogoerane

23 October 2015

- Far East Rand



Ekurhuleni District (Gauteng)

Slide with compliments
Lynsey Isherwood

With compliments: Lynsey Isherwood

Project progress to date

Project Progress

- Five MDR-TB Treatment Initiation facilities in Ekurhuleni.
- Pre and Post Training Evaluations of the app with HCWs.
- 4 app upgrades after feedback from HCWs, since implementation
- 2 reports are generated (1) **Patients linked into care**, (2) **Exceptions Report** (those that have not been linked into care).
- ***'Treat-TB Notify'* app added to programme after TB Coordinator feedback (2 October 2015).**
- 4 DoH TB Coordinators, 7 local municipality Coordinators receiving SMS notifications (4 receiving through 'notify' app) → 5/11 non-android phones.
- Both apps accessed through Google Play Store.

Results (2 June to 31 March 2016)

	n
Total number of patients diagnosed by GXP (excluding duplicate tests) in Ekurhuleni (Total number of results received on TreatTB App)	378
Total number of R-R patients linked to care	**241 (64%)**
Total number linked to care ≤ 5 days (including weekends)	104 (28%)
Total number of patients with duplicate tests	15
Average days linked to care (including weekends)	10

In Process:

- Investigating 137 patients on Exceptions Report

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Challenges

- **Connectivity/Technical challenges (Natalspruit and Berth Gxowa)** → Identify hotspots; investigate roaming SIM cards.
- **Lack of IT Knowledge** → pre-implementation training; post-implementation evaluation; on-going monitoring & support.
- **SMS Notifications to TB Coordinators** → Treat-TB Notify (Clinicians & HCWs)
- **Treat-TB Notify app sending message but SMS printer not working** (Slovo Park Clinic and Emaphupheni Clinic – these patients would usually be initiated at Pholosong), ***HCW/Clinician needs a hard copy for Tx initiation (policy***).
- No longer at Far East Rand → not an initiation site; refer to Pholosong

TreatTB Conclusion

- R-R patients only → can extend to include DS-TB patients.
- Simple to implement.
- Records which drugs have been initiated.
- Implementation can continue without budget → TreatTB Notify (TB Coordinators, HCWs, Community Workers, etc.)
- DoH Personnel → sustainability → Not solely dependent on grant funding

Notification Solution:
"TreatTB Notify" for Clinicians & HCWs
(extension of SMS Printers)

TreatTB-Notify

Connecting TB coordinators with Patients

TLC ENGINEERING SOLUTIONS (PTY)LTD
SOLUTIONS SOFTWARE TECHNOLOGY

PEPFAR

health
Department:
Health
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Goals

- To send patient details from specified facilities to facility TB coordinators
- TB coordinators will receive notifications when new patient details are available
- Patient details include:
  - Name and Surname
  - ID Number (if it is available)
  - Date of Birth (DOB - If it is available)
  - Name of facility where patient was diagnosed by GXP
  - Cell phone number
  - Barcode reference number
  - Date of diagnosis
- TB coordinators can remove patient from his/her list after the patient was traced. (The patient details will still be available on the server if the patient was accidentally removed from the TB coordinator's application.

With compliments: Lynsey Isherwood

Registration of TB coordinator

Registration page with TB coordinator details added.

With compliments: Lynsey Isherwood

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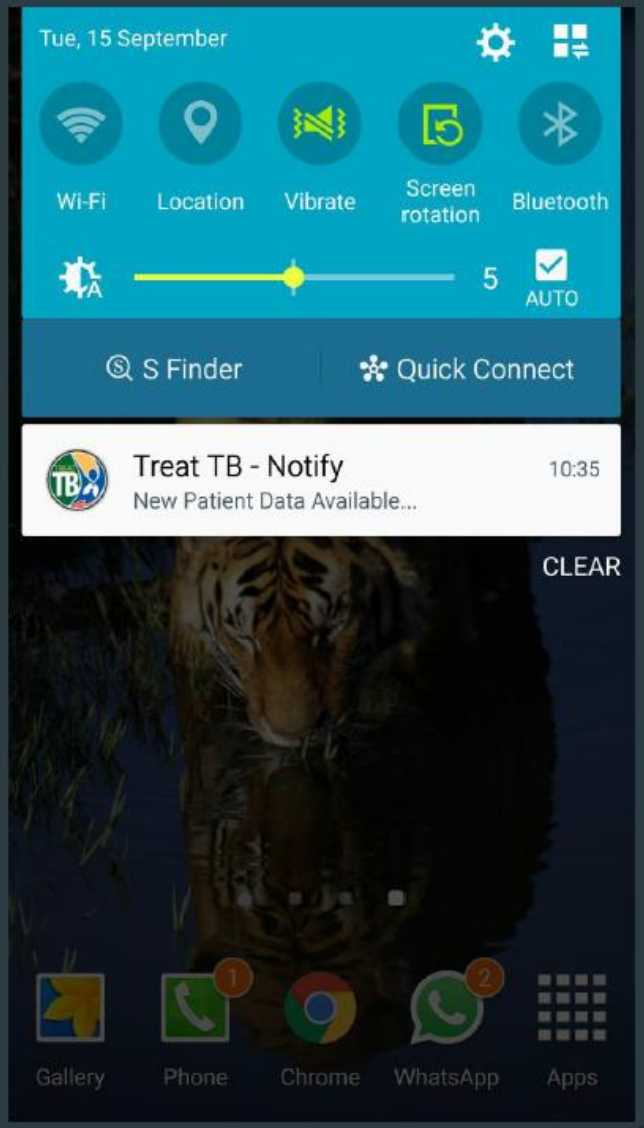
Notification of New Patient data.

TLC Server receives an SMS with patient details

The server then does some checks to see if the facility has a TB coordinator and then sends a notification to the relevant TB coordinator.

This is what the notification looks like:



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Patient list

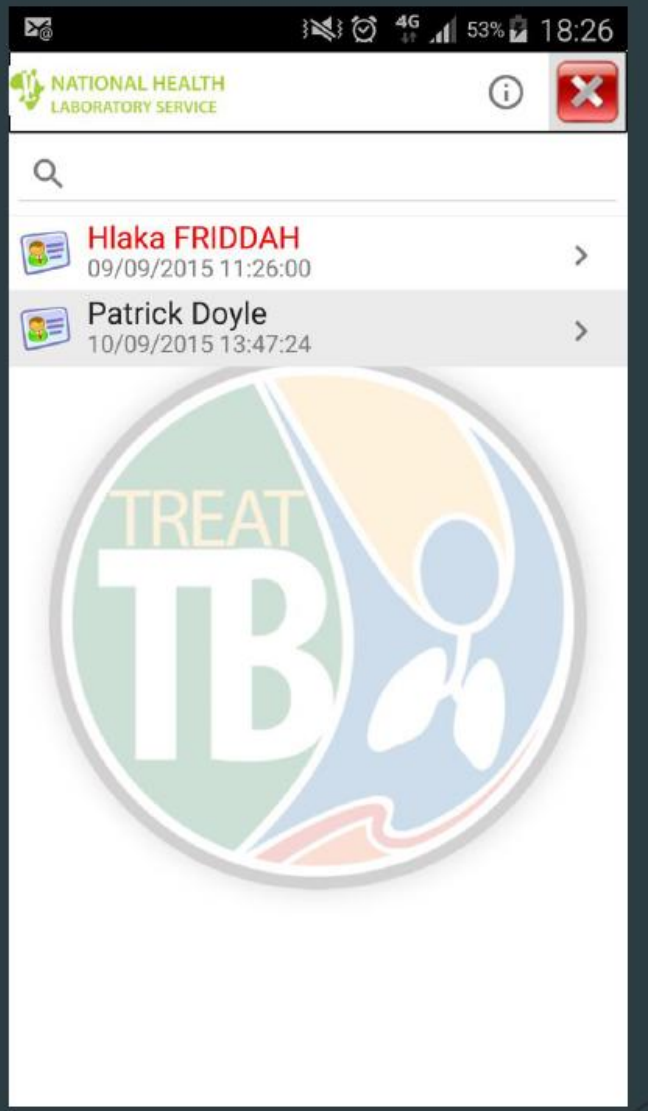
This will be the main screen after successful registration.

If there are patient details for the TB coordinator available, the server will then populate this list with the details of the patient:

- Name
- Surname
- Date diagnosed

If the diagnosed date is bigger that 5 (five) days, the name and surname will appear RED

If the date is less then 5 days then the name and surname will appear in BLACK.



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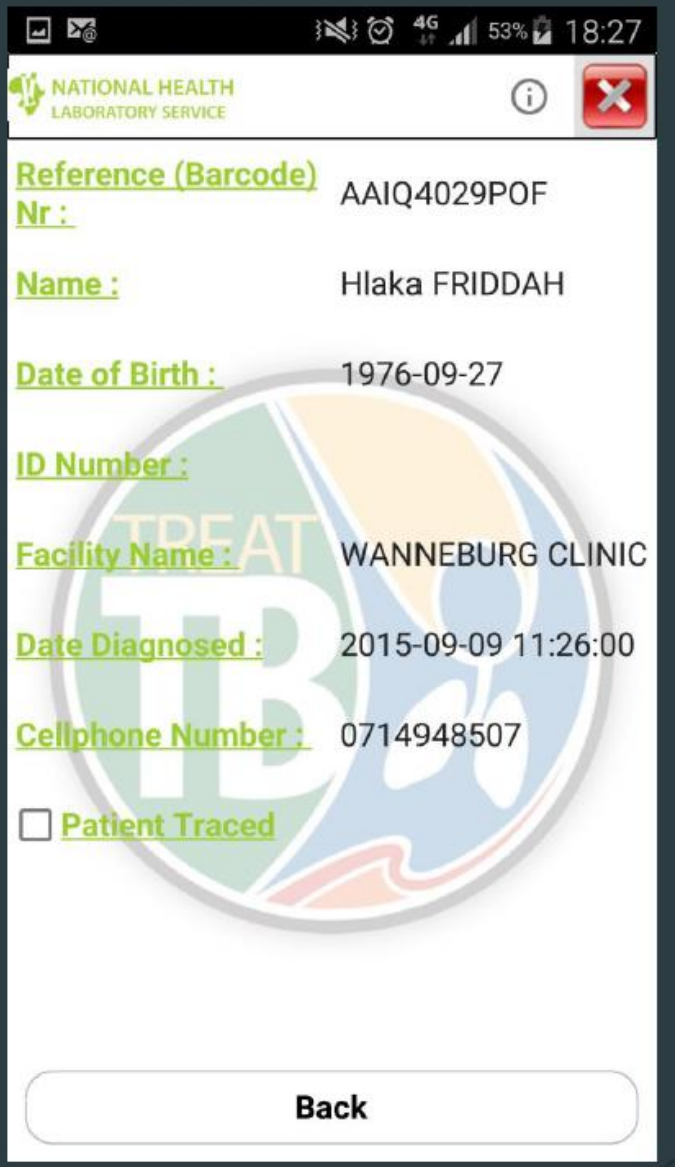
Patient Details

This is the screen that the TB coordinator will see after he has selected a patient from the patients list.

Details include:

- Name and Surname
- ID Number (if it is available)
- Date of Birth (DOB - If it is available)
- Name of facility where patient was diagnosed by GXP
- Cell phone number
- (Barcode) reference number
- Date of diagnosis

Patient traced Checkbox → when the TB coordinator has traced the patient, he/she can now remove him from the patients list by checking the "Patients Traced" Checkbox and the selecting the "Submit" button.



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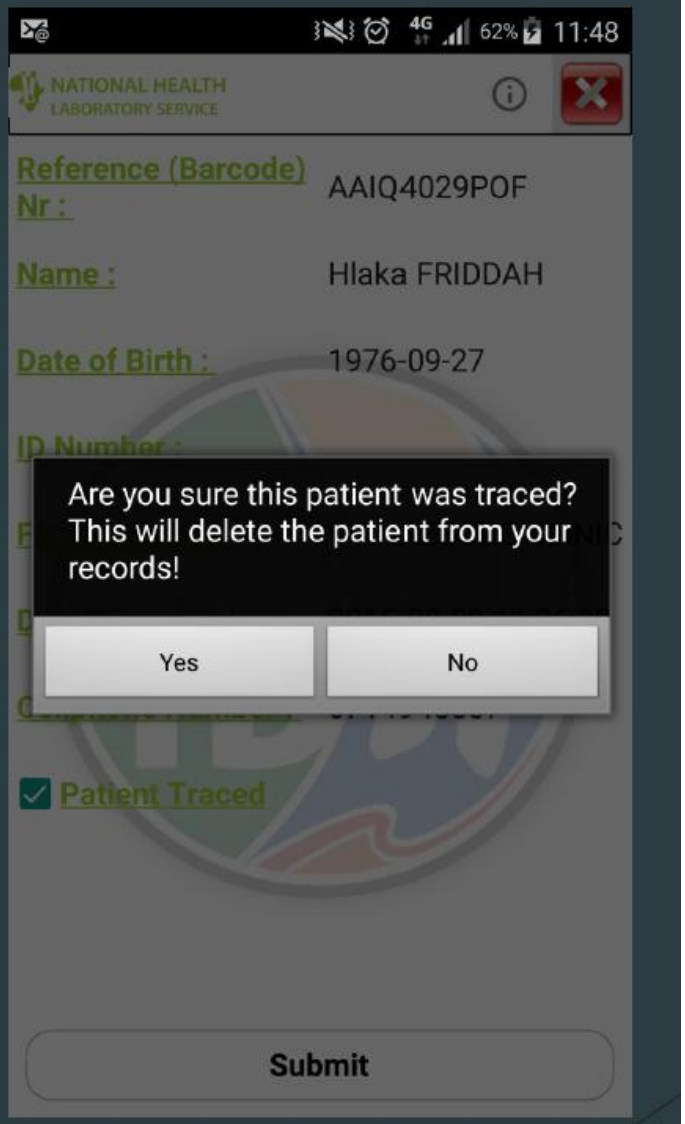
Patient Traced Confirmation

This message prompts the user if the patient was traced.

Selecting 'YES' will remove the patient from the TB coordinator's list.



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TreatTB Acknowledgements

- Zodwa Mntambo (Gauteng DoH)
- Refilwe Mokgetle (Gauteng DoH)
- Francinah Nonyane (Gauteng DoH)
- Khanyisile Mabaso (Gauteng DoH)
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- Lesley Scott
- Rafe Dyer
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- Sue Candy
- Jason Farley
- Jane McKenzie-White
- Sebastian Seiguer
- Mani Naicker
- Annatjie Peters
- Matsie Mphahlele
- Varough Deyde
- Adeboye Adelekan
- Dr Mark Nicol
- Dr Lindy Dickson-Hall

miLINC

THE MDR-TB Partnership

Supported by:

health
REPUBLIC OF SOUTH AFRICA

The Global Fund
To Fight AIDS, Tuberculosis and Malaria

CDC

JOHNS HOPKINS
SCHOOL of NURSING

Jhpiego

emocha
MOBILE HEALTH INC.

NATIONAL HEALTH LABORATORY SERVICE

With Compliments: Emocha

SOUTHERN AFRICAN HIV CLINICIANS SOCIETY

2016

MDR-TB Objective

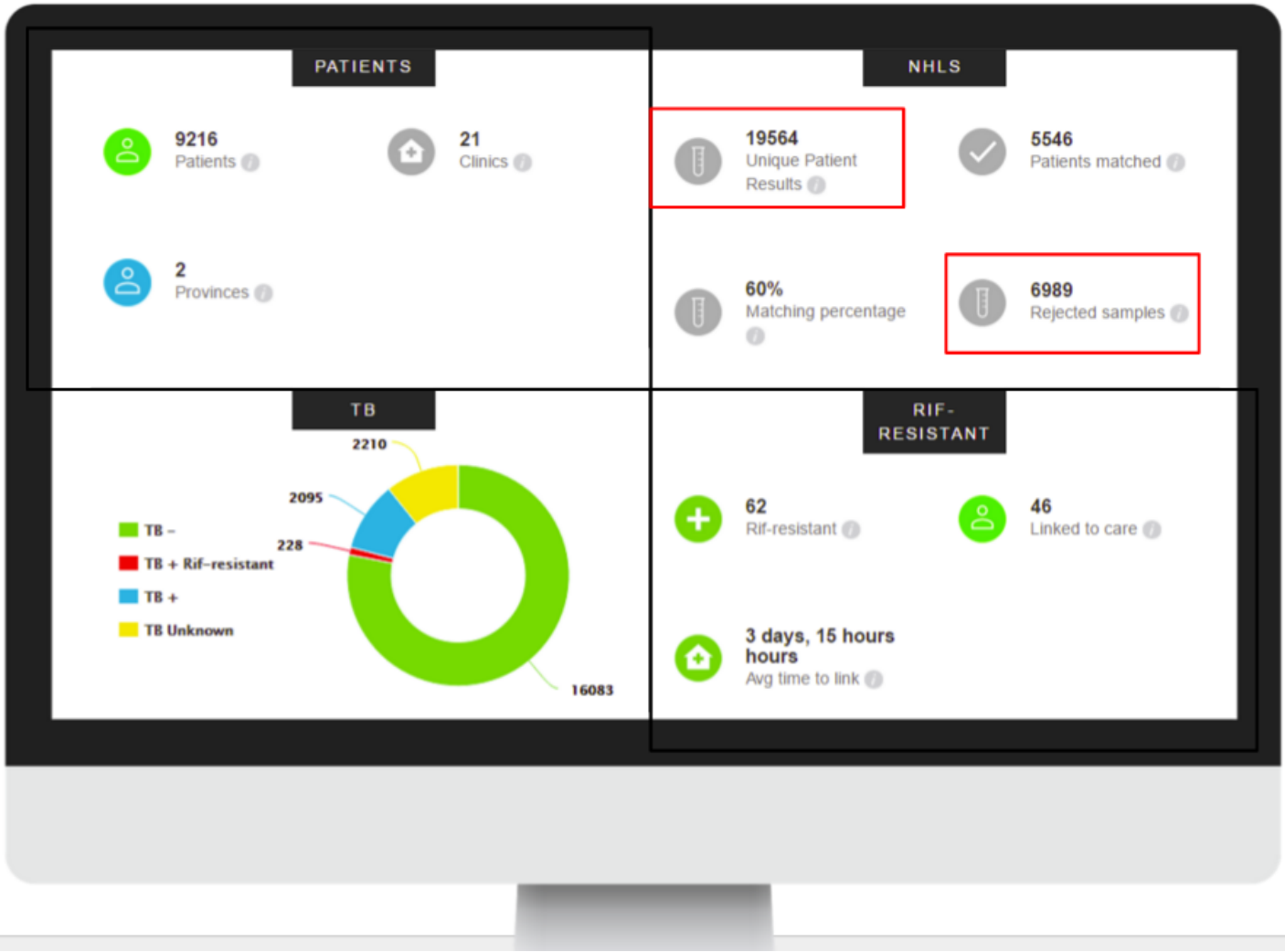
"Improvement in identifying and and curing drug-susceptible TB and early detection and effective treatment of all MDR-TB cases **(reduce time from suspicion to starting standard second-line treatment – five working days)**" National Strategic Plan on HIV, STIs and TB: 2012-2016

miLINC Solution

1. Suspect tests for TB at PHC clinic and enroll in emocha
2. Lab results appear on tablet in real time; Linkage status visualized
3. Linkage officer contacts suspects who are MDR-TB positive
4. Patient checks-in to MDR-TB clinic

With Compliments: Emocha

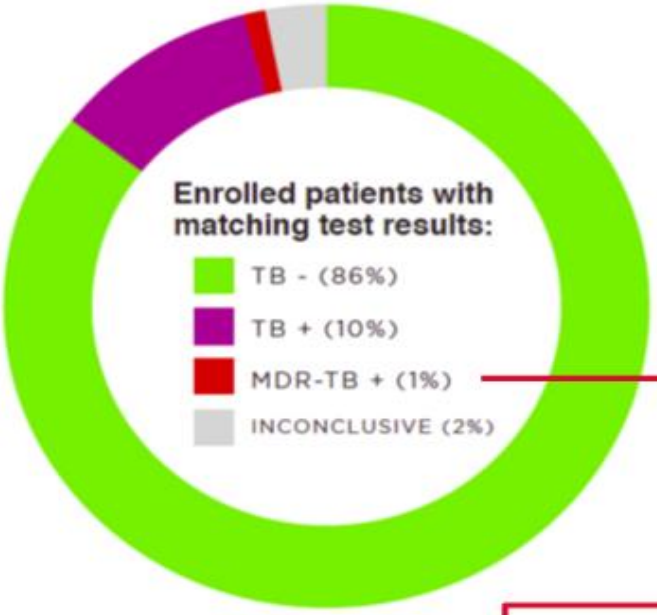
Web Portal



With Compliments: Emocha

Enrolled patients with matching test results

March 2015 – 31 March 2016



46/62 (74%)

R-R patients linked to care

miLINC

Average time MDR-TB patients to linked into care:
3 days and 15 hours

With Compliments: Emocha

2016

MDR-TB | Acknowledgements

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Amanda Allen

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Leigh Berrie
Lynsey Isherwood
Floyd Olsen
Portia Madumo
Sue Candy
Jaco Grobler

miLINC: IMPLEMENTATION STATUS

- First implemented in KZN, March 2015
  - Initially selected Ugu district, 3 different facilities.
  - Scaled up to additional 5 facilities in Ugu.
- Implemented in 2 districts in EC, December 2015
  - Buffalo City (11 sites) and Nelson Mandela Bay (17)
- Fostered partnership with NHLS on receiving live data from NHLS CDW
- Multiple trainings held
- Multiple presentation and meetings with provinces
- Expansion to Tshwane, Ethekwini, FS and NC

miLINC: CHALLENGES

- Enforce SOPs at the clinic level – actively using miLINC to enroll clients
- Slow and cautious buy-in from provinces.
  - Sustainability and continuation
  - Global Fund Project
  - HR issues: facility TB staff/data capturer, rotation, patients not enrolled timeously
- Implementation plan evolving
- Decentralization of MDR-TB
- Benefits Understanding
- Market volatility of specified mobile device (7” tablets)

SmartLtC: NHLS resulting for linkage-to-care study (HIV)

With compliments: Jesse Coleman (WRHI)

SmartLtC: Background

- Research shows smartphone apps improve adherence through engagement
  - Perera et al. 2014 found decreased viral load at 3 months (p=0.023) in patients (n=28)

- Observation of high smartphone use in Hillbrow CHC

SmartLtC Study overview

WORLD BANK GROUP

Randomised, Controlled Study

UKaid
from the British people

- 500+ patient RCT in Johannesburg Region F
  - 250 male & 250 18-30 years
  - Smartphone app vs standard of care
- App provides CD4/VL, appointment reminder notification & HIV support information
- Primary outcome: Linkage to care (defined as attending for a CD4 count measurement PLUS one other NHLS test *within 8 months of HIV diagnosis*).
- Secondary outcomes: Assess feasibility & acceptability, ART initiation rates, patient satisfaction, cost effectiveness, patient understanding of test results

With compliments: Jesse Coleman (WRHI)

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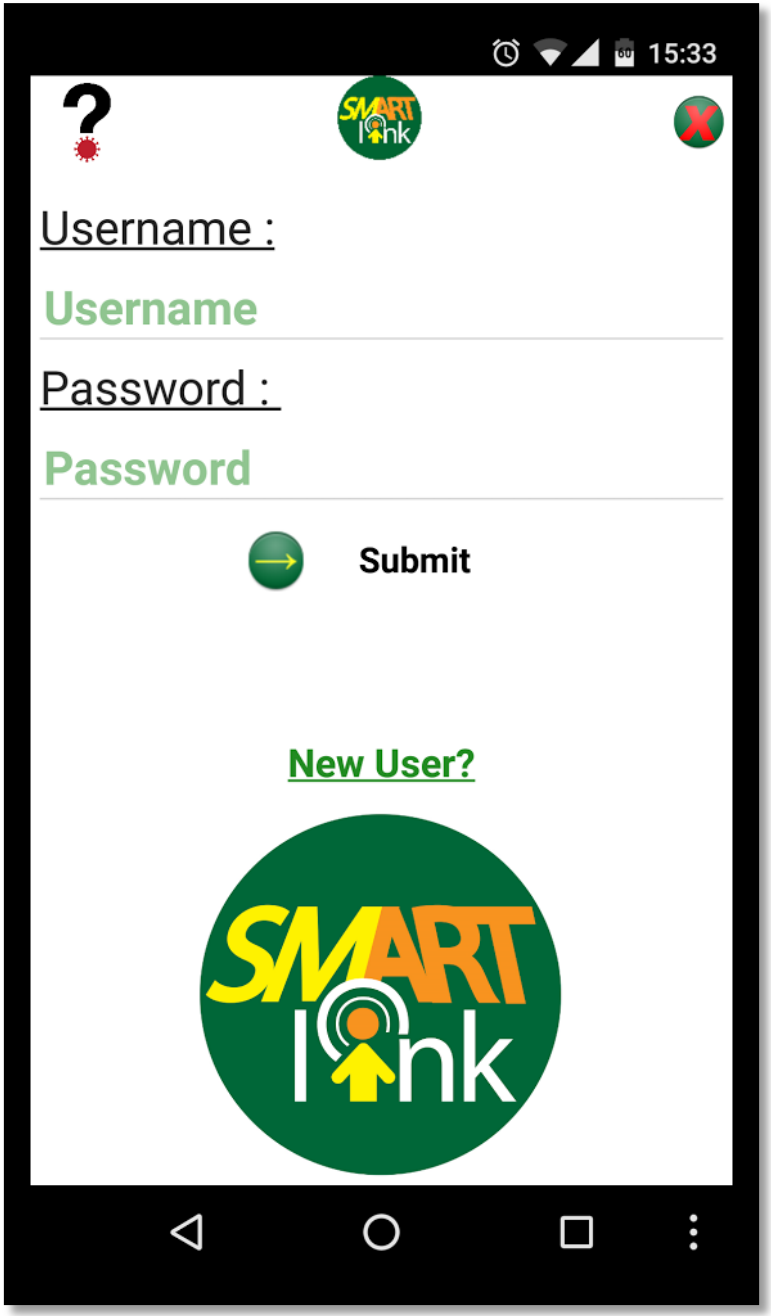

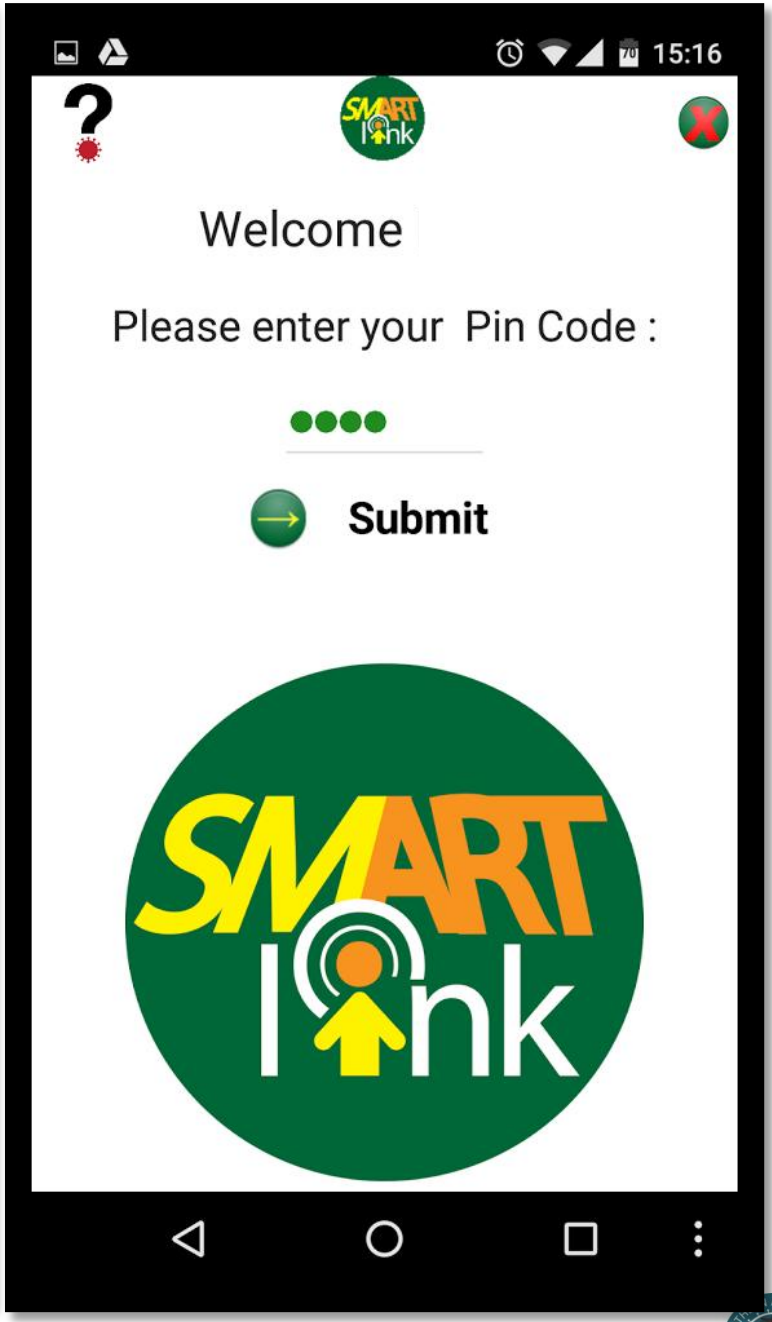

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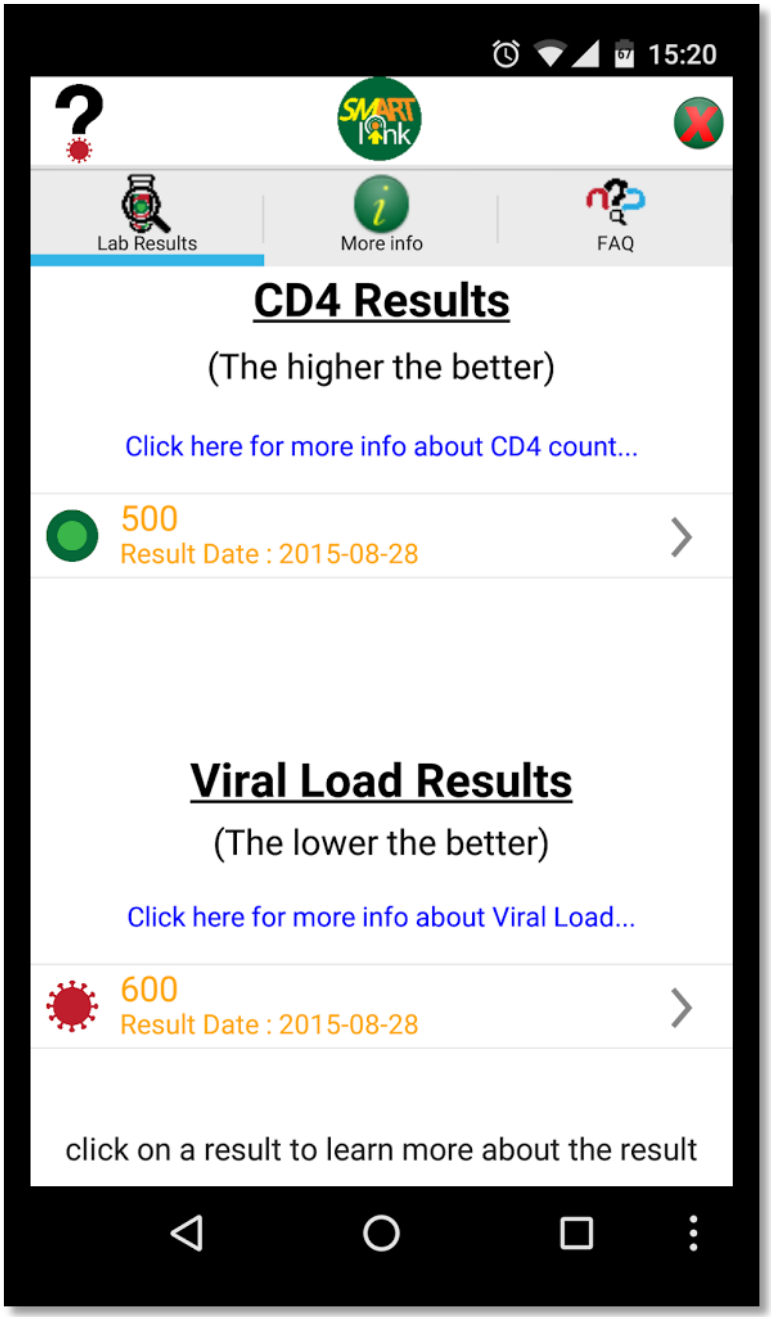
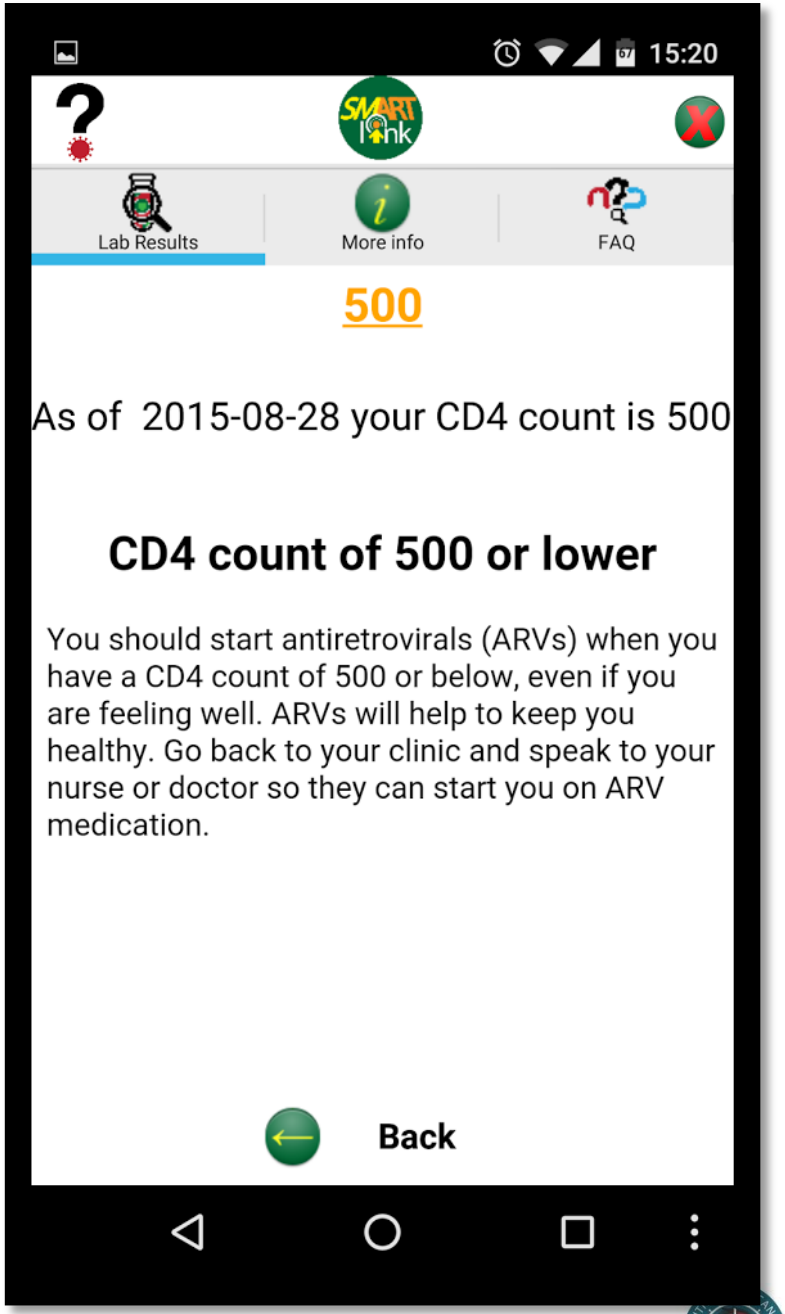

15:20
Lab Results
More info
FAQ
CD4 Results
(The higher the better)
Click here for more info about CD4 count...
500
Result Date : 2015-08-28
Viral Load Results
(The lower the better)
Click here for more info about Viral Load...
600
Result Date : 2015-08-28
click on a result to learn more about the result


15:20
Lab Results
More info
FAQ
500
As of 2015-08-28 your CD4 count is 500
CD4 count of 500 or lower
You should start antiretrovirals (ARVs) when you have a CD4 count of 500 or below, even if you are feeling well. ARVs will help to keep you healthy. Go back to your clinic and speak to your nurse or doctor so they can start you on ARV medication.
Back

SmartLtC: Project Status

- Recruitment over 4 sites: ~300
- 47% of screened patients have Android Smartphone
- App installed on ~150 phones
  - Positive reaction to app
    - App opened over 6 times per user
  - Use of app in Zimbabwe
- 6 month follow-up reminders starting
- Possible expansion to Eastern Cape & Limpopo
  - 60% smartphone ownership rate at PHC's in Port Elizabeth & East London

SmartLtC: Acknowledgements

Wits RHI
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GSMA 2015 Mobile Economy Report

- Mobile devices have become the “cornerstone of the global economy”.

Mobile Companion Devices for Health Workers

Fionet Tablets and Phones

clinical workflow guidance, quality control, traceability, data capture, communication, cloud information services; Android platform, open architecture for 3rd-party apps

Fionet Readers

Same software as Tablets/Phones + automated analysis of standard rapid diagnostic tests (RDTs); open system for multiple diseases, multiple manufacturers

Investigating other android powered blood testing innovations

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Disrupt Yourself for Long-Term Sustainability

Thank you!

With compliments: Lynsey Isherwood