

IT ALL STARTS AT THE CLINIC

A VISION FOR CONNECTED CARE
IN SOUTH AFRICA



**Virtual
Hospitals
Africa**

WHO WE ARE

Virtual Hospitals Africa is a registered South African Nonprofit Company offering an open source, easy-to-use cloud platform for health workers to coordinate care

PROBLEMS WE'RE ADDRESSING

- ▲ Low doctor staffing → remote case review & triaging
 - ⬠ Clinical errors → medical record follows patient
 - ✘ Expensive travel → more cases handled at clinic
 - ✂ No patient tracking → seamless followup & continuity
 - ★ Limited visibility → aggregate data supports policy making
-

OUR APPLICATION



- Warning Signs
- Brief History
- Height & Weight
- Measure Vitals
- Additional Tasks & Investigations
- Assign Priority
- Route Patient

Triage

Chief complaint

No findings selected

EMERGENCY

- Obstructed airway
Not breathing
- Cardiac arrest
Heart attack
- Seizure
Current
- Burn
Facial
- Burn
Inhalation

VERY URGENT

- Shortness of breath
acute
- Chest pain
- Seizure
Post ictal
- Focal neurology
acute; Stroke
- Burn
Chemical
- Coughing blood
- Poisoning
Overdose
- Aggression
- Severe limb ischemia
Threatened limb
- Burn
Circumferential
- Vomiting fresh blood
- High energy transfer
Severe mechanism of injury
- Stabbed neck
- Eye injury
- Burn
Over 20%
- Compound fracture
with a break in the skin
- Severe pain
- Burn
Moderate severity

URGENT

- Closed fracture
no break in the skin
- Moderate pain
- Burn
Other
- Abdominal pain

Lindiwe Nkosi

The first step of triage is to ask for the patient's chief complaint and check for warning signs.

Next

Next →

Duduzile Langa

Undetermined

female • 20 June 1990

This Visit

Warning Signs *In Progress*

History

Pre Existing Conditions

No findings entered

Allergies

Allergy to peanut

Family History

No findings entered

Major Surgeries

No findings entered

Medications

No findings entered

Lifestyle

No findings entered

Documents

No findings entered

Lab Results

No findings entered

Care Team

See a list of all the doctors who have had contact with the patient in the recent past.

Create Google Meet



Primary Care Nurse

HOW IT WORKS

1

CLINIC ACCESS

Staff are trained and equipped with satellite internet & tablets

2

TRIAGE PATIENTS

Nurses capture vitals, symptoms, and clinical history with guidance from the South African Triage Scale and Practical Approach to Care Kit

3

CASE ESCALATION

Urgent or complex cases may be escalated through the senior health care professional to remote doctors for review

4.

TREATMENT PLANNING

Doctors can finalize diagnoses and issue prescriptions, referrals, and laboratory requests

5

REGIONAL MONITORING

Anonymized aggregate data can be accessed by licensed professionals to inform health strategy and respond to crises

DECISION SUPPORT

Triage

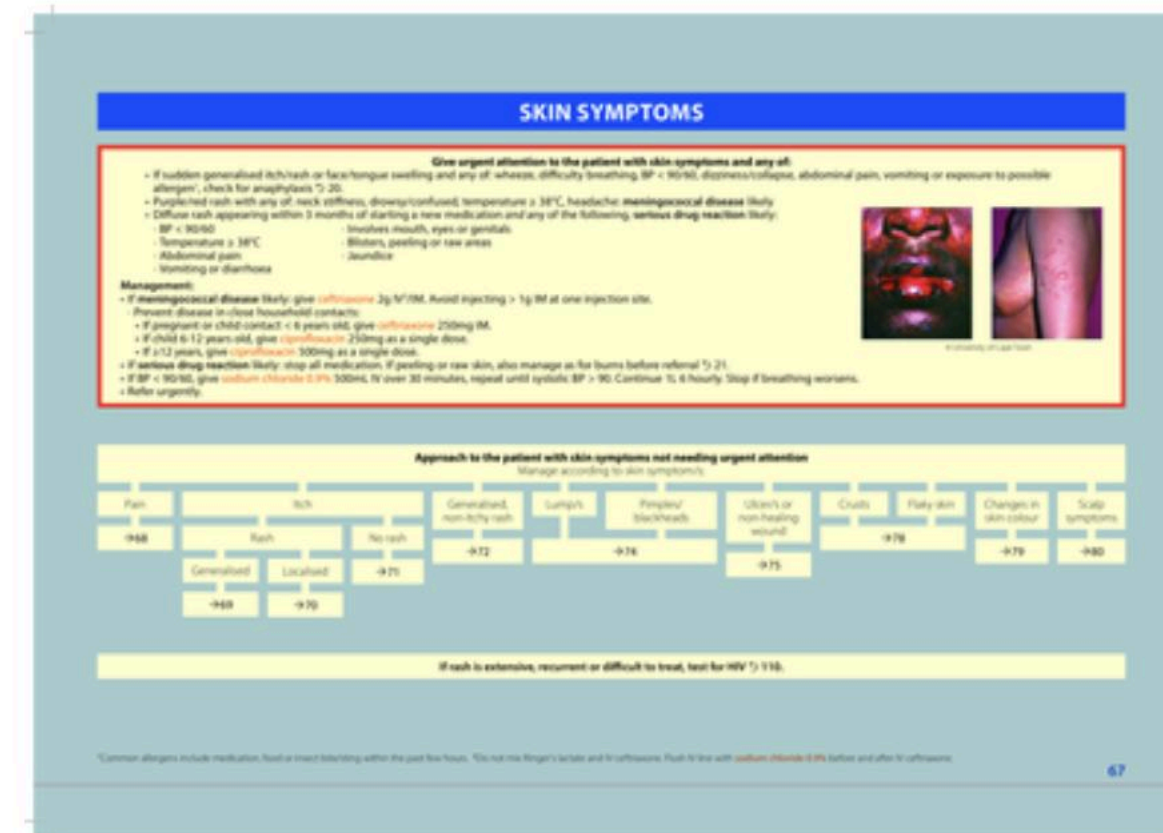
Additional Investigations

Due to [Itching](#) recorded at 1:44 PM

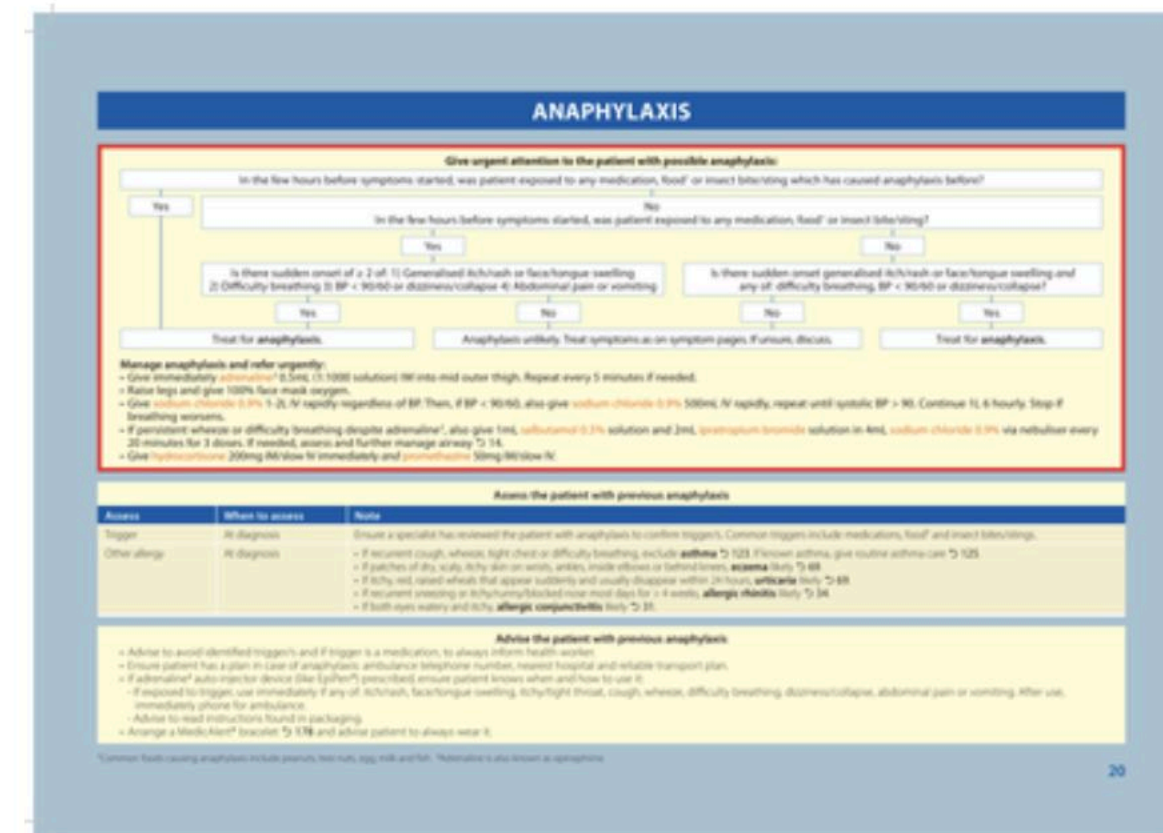
Due to [Anaphylaxis Diagnosis: Possible diagnosis](#) recorded at 1:44 PM

Check For	Yes	No	Unknown
Sudden onset Itching*	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Sudden onset Eruption*	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Insect bite - wound*	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>
Insect bite - wound: No recorded at 1:44 PM			
Sudden onset Swelling (Face structure)*	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Sudden onset Swelling (Tongue structure)*	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Dizziness*	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>
Dizziness: No recorded at 1:44 PM			
Collapse*	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Difficulty breathing*	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Exposure to Peanut*	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Exposure to Tree nut*	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Exposure to Eggs (edible)*	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Reference Documents



APC 2023 — Itch



APC 2023 — Anaphylaxis

Triage Early Warning Scoring

South African Triage Scale

Case priority and target time to treatment

Additional Tasks & Investigations

South African Triage Scale + Adult Primary Care Guidelines

Prompts to check for certain findings, measurements, and tasks

Diagnoses

Adult Primary Care Guidelines

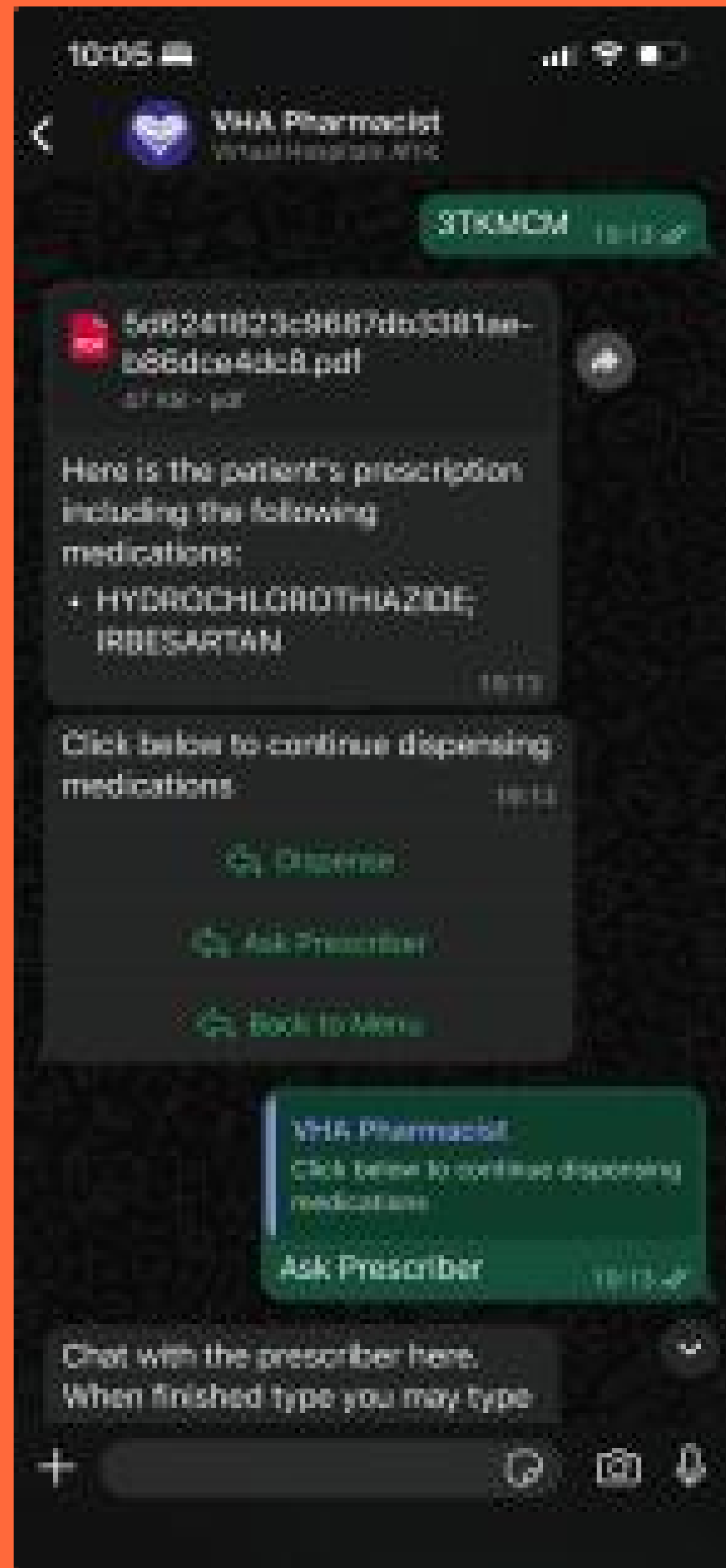
The system diagnoses patients at a possible or probable certainty level

Recommended Dose Schedules

Essential Medicines List

Medications with dosages by conditions, age, and weight

MEDICATION REDEMPTION

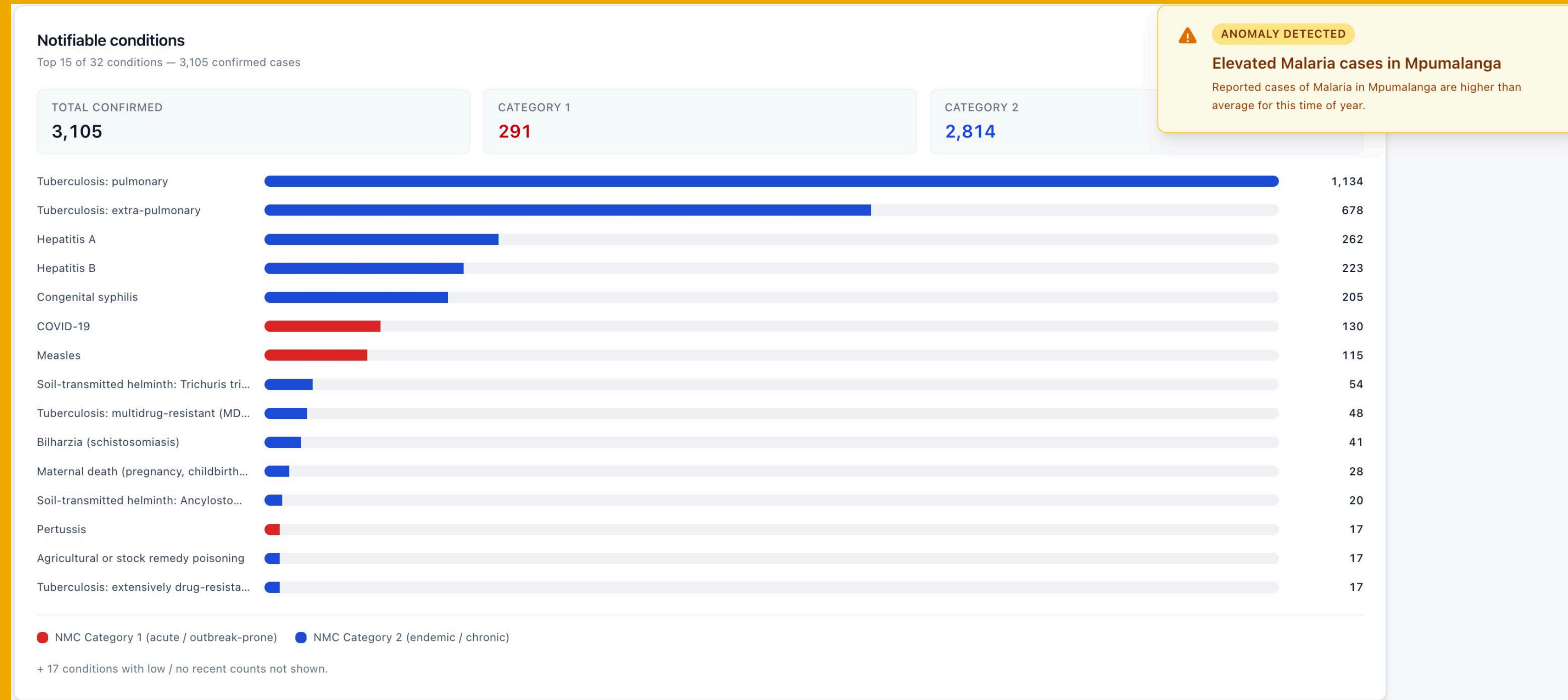


Patients can redeem medicines using a one-time code given at discharge.

A **WhatsApp chatbot** enables pharmacists to ask the prescriber directly if there any questions about medications

The system overall helps improve traceability and reduce errors helping ensure patients follow through on treatment.

COUNTRY-WIDE ANALYTICS



Collecting granular health data at the point of care in accordance with POPIA enables the possibility of tracking diseases at a country-wide level

Anonymized aggregate data can be compared across geography and temporality to support anomaly detection, giving health authorities advance warning of situations that could be signs of an outbreak.

CURRENT PARTNERS

UNIVERSITY OF
LIMPOPO

LIMPOPO
DEPARTMENT OF
HEALTH

UNIVERSITY OF
CAPE TOWN

KNOWLEDGE
TRANSLATION
UNIT

clinical governance • research and evaluation •
guideline integration • health system implementation

OUR TECHNOLOGY

SCALABLE

**LOW RESOURCE
USAGE +
CONTAINER
ARCHITECTURE**

SECURE

**WELL-DEFINED
AUTHORIZATION
PROCEDURES IN
ACCORDANCE
WITH POPIA**

**USER-
FRIENDLY**

**STREAMLINED
PROCESSES +
CLEAR
INFORMATION
HIERARCHY**

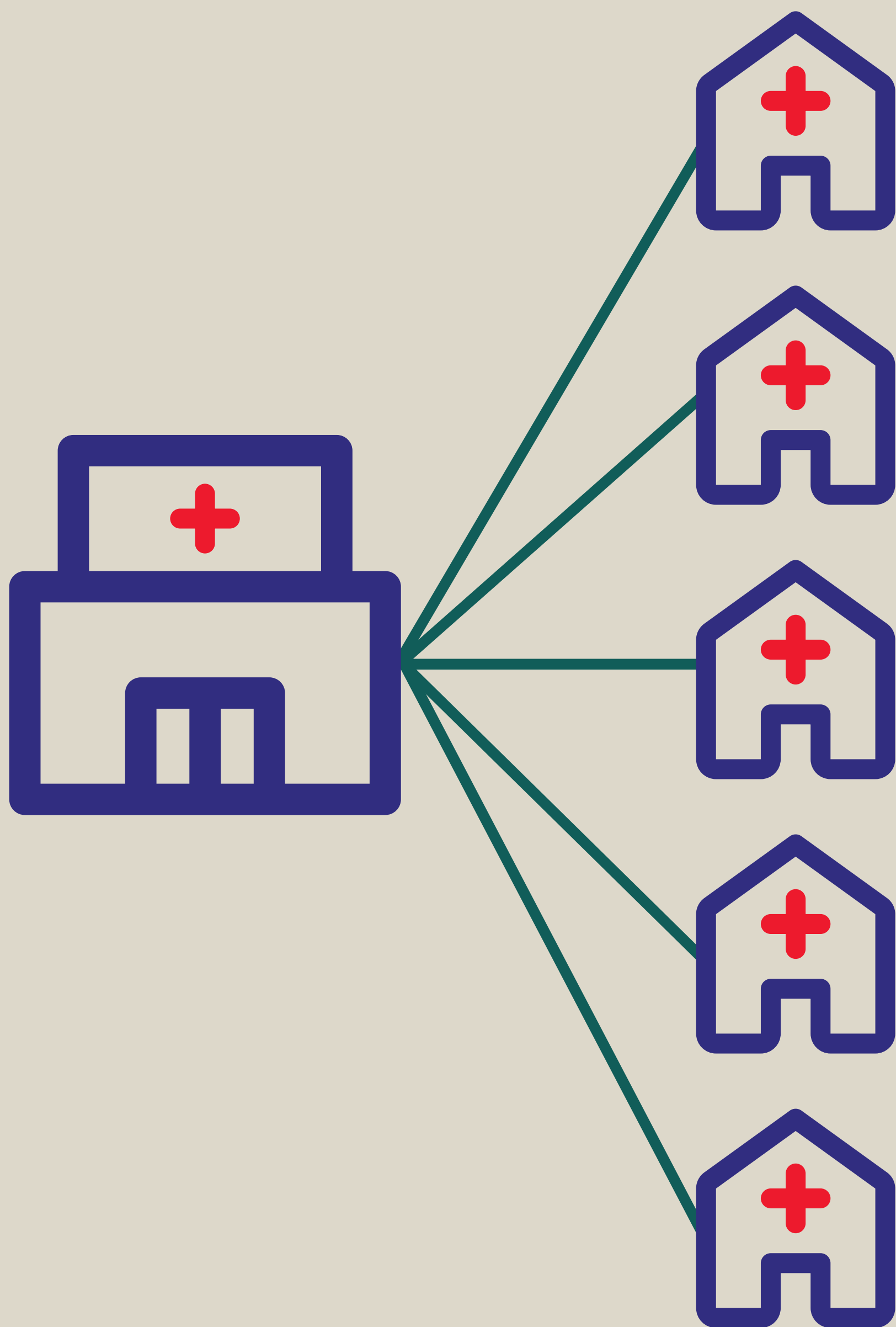
FAST

**BANDWIDTH-
AWARE DESIGN +
CUTTING-EDGE
OPEN SOURCE
TOOLS**

COMPETITOR ANALYSIS

	Virtual Hospitals Africa	Provincial Health Data Centre (Western Cape)	Discovery Health / Clicks
Aggregate patient data	✓	✓	
Individual patient records	✓		
Easy setup	✓		✓
Easy to use	✓		✓
Remote case review	✓		
Global medical network	✓		
Inventory management	✓	✓	
Booking system	✓		✓
Low marginal cost	✓		
Patient follow-up	✓		
Video appointments	✓		✓
Medication tracking	✓		✓
Research support	✓	✓	

PILOT



1 District Hospital

Clinical hub; remote case review;
manage referrals & admissions

5 Primary Clinics

Capture patient history; perform
triage; provide care

Duration

12 months; includes deployment,
training & operation

Evaluation

Faster time to treatment;
Improved diagnostic accuracy;
Reduced patient overflow

SCALING UP

O1 INITIAL ALIGNMENT

Co-design with patients, health workers, partners, and other stakeholders

O2 PILOT

Prove platform efficacy in five clinics + one hospital

O3 SCALE UP

Expand to rest of province and health facilities. Add protocols for specific specialties and conditions with further research opportunities

O4 COUNTRY-WIDE

Achieve Digital Health Transformation in alignment with South Africa National Health Plan and Sustainable Development Goals

O5 CONTINENT-WIDE

Enable access for licensed practitioner within other countries across Africa

**THANK
YOU**