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Role of digital technology in streamlining, collection, reporting and use of malaria surveillance data

Poppy Farrow, Malaria Consortium

SMERG 18th May 2022.

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Ministério da Saúde
Direcção Nacional de Saúde Pública

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Programa Nacional dos Agentes Polivalentes Elementares-PNAPEs

upSCALE

‘’ A digital *Mobile Health* platform to improve the provision of health services at community level’’

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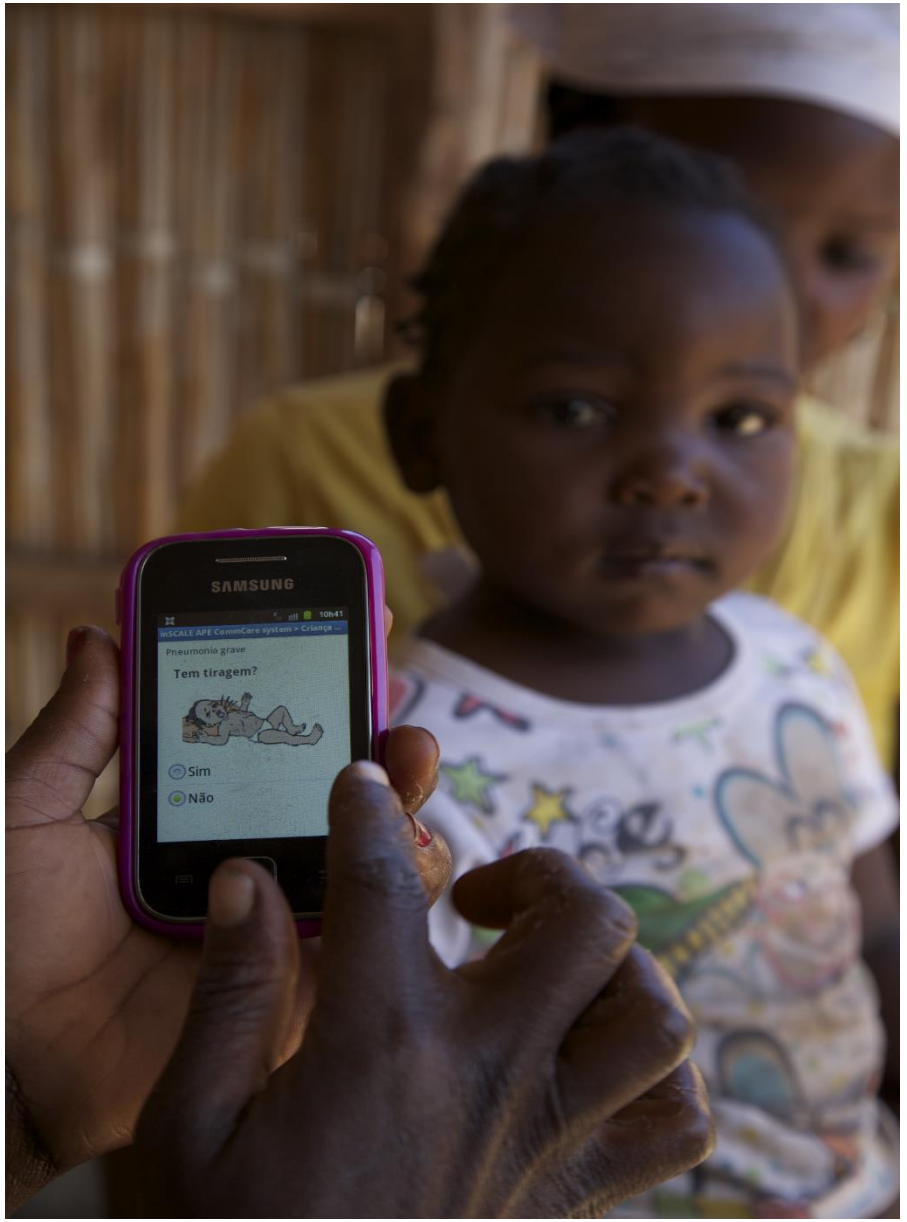
What is upSCALE?

upSCALE is a Ministry of Health led digital health system strengthening platform for community health workers in Mozambique

It has been implemented with the support of Malaria Consortium and UNICEF since 2016, with financial support from DFID / UK Aid, in 7 provinces (Inhambane, Gaza, Maputo Province, Sofala, Cabo Delgado, Zambézia and Nampula).

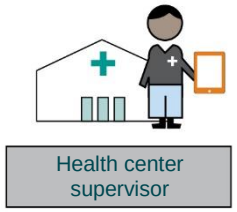
The Ministry of Health has incorporated upSCALE into its new national strategy for community health workers (Agente Polivalente Elementary - 'APE') and aims to expand to the entire country by 2024.



MISAU: O nosso maior valor é a vida

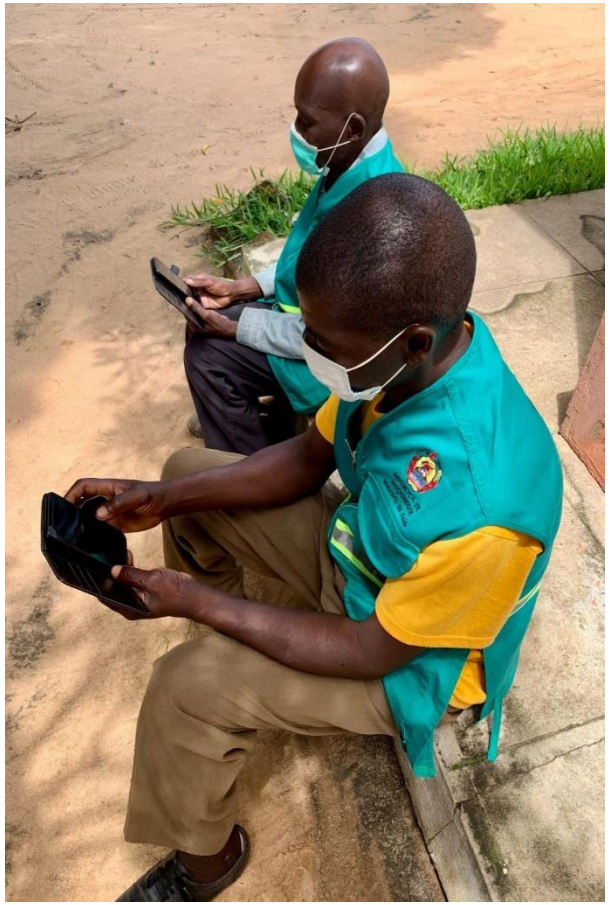
upscale Objectives

Improve: the quality of APE case management, health education and patient follow-up using an interactive mobile phone app with a patient-focused decision support tool that covers the entire APE curriculum.



Support: Health Facility Supervisores in monitoring APE performance and stock management using an integrated tablet based supervision application.

Improve: quality and usage by providing near real-time patient data from the upSCALE app that is sent to the national health system through the DHIS2 (District Health Information System) for monitoring and decision-making at multiple levels.



The Ministry of Health has embedded upSCALE into the new national strategy for community health workers (Agente Polivalente Elementare - 'APE') and aims for national expansion by 2022

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Coverage Areas

Key:

upSCALE implemented

upSCALE implementation in progress

Expansion planned for 2023

Number of users registered on the platform by province (April 2022):

- Inhambane - 261 APE/102 Supervisors (363 in total)
- Zambezia – 607 APE / 161 Supervisors (768 in total)
- Cabo Delgado - 327 APE / 101 Supervisors (428 total)
- Maputo – 210 APEs/ 72 Supervisors (282 in total)
- Nampula – 316 APE / 41 Supervisors (357 in total)
- Gaza – 125 APEs / 53 Supervisors (178 in total)
- Sofala – 347 APE/136 Supervisors (592 in total)

Total = **2,968 to date**.

UpScale content

Household Management

User Registration

Patient Registration

Postpartum visit

Nutrition & Health Card

Pregnancy visit

Screening newborn, infant, under 5 and over 5 years

HIV

TB

ECD Module

First Aid module

Patient Services

Follow up

Stock Management

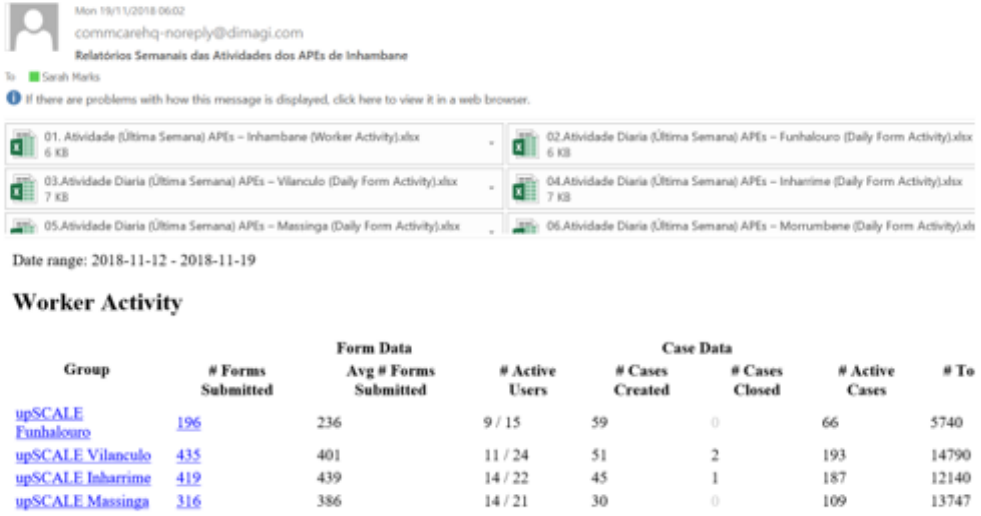
Births & Deaths

Health promotion

Improved supervision reports

Reporting

- Automated APE and supervisor reports emailed to district, provincial and national levels
- Real-time upSCALE data pushed to DHIS2
- Dashboards on DHIS2 on MoH APE monthly indicators



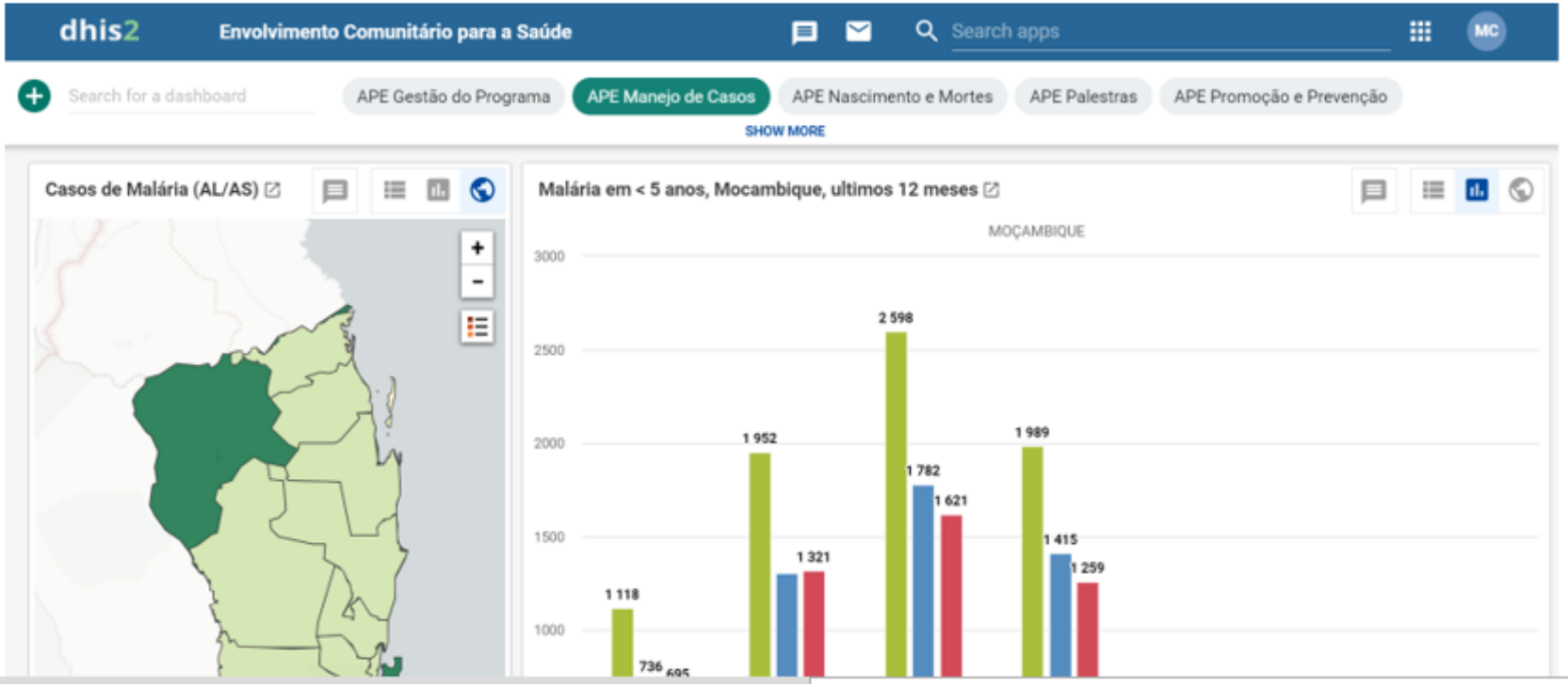
Mon 19/11/2018 06:02
commcarehq-noreply@dimagi.com
Relatórios Semanais das Atividades dos APEs de Inhambane
To: Sarah Marks
If there are problems with how this message is displayed, click here to view it in a web browser.

01. Atividade (Última Semana) APEs – Inhambane (Worker Activity).xlsx 6 KB
02.Atividade Diaria (Última Semana) APEs – Funhalouro (Daily Form Activity).xlsx 6 KB
03.Atividade Diaria (Última Semana) APEs – Vilanculo (Daily Form Activity).xlsx 7 KB
04.Atividade Diaria (Última Semana) APEs – Inharrime (Daily Form Activity).xlsx 7 KB
05.Atividade Diaria (Última Semana) APEs – Massinga (Daily Form Activity).xlsx
06.Atividade Diaria (Última Semana) APEs – Morrumbene (Daily Form Activity).xls

Date range: 2018-11-12 - 2018-11-19

Worker Activity

Group	Form Data # Forms Submitted	Form Data Avg # Forms Submitted	Form Data # Active Users	Case Data # Cases Created	Case Data # Cases Closed	Case Data # Active Cases	Case Data # To
upSCALE Funhalouro	196	236	9 / 15	59	0	66	5740
upSCALE Vilanculo	435	401	11 / 24	51	2	193	14790
upSCALE Inharrime	419	439	14 / 22	45	1	187	12140
upSCALE Massinga	316	386	14 / 21	30	0	109	13747



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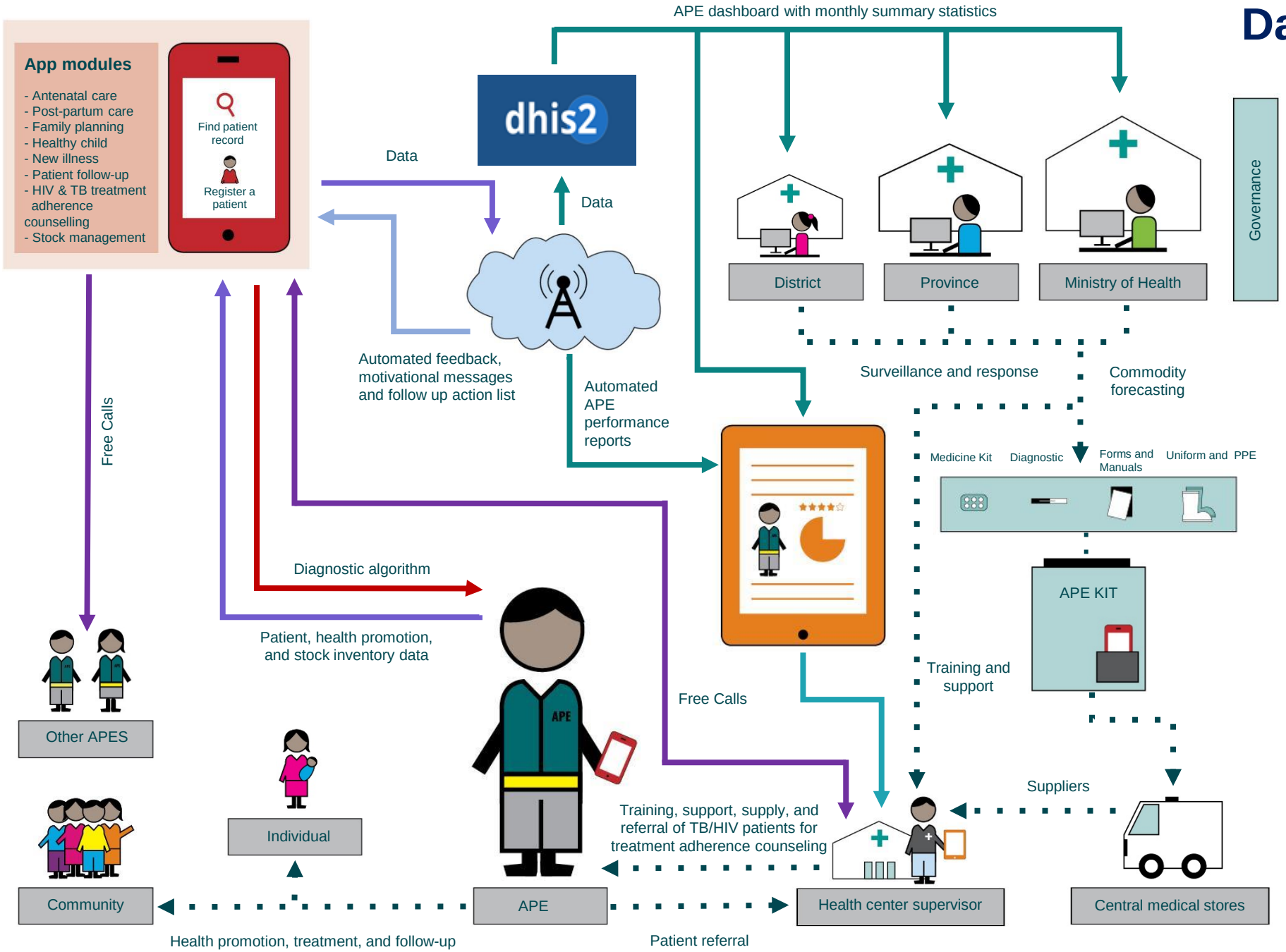
Data Flow


APE dashboard with monthly summary statistics
App modules
- Antenatal care
- Post-partum care
- Family planning
- Healthy child
- New illness
- Patient follow-up
- HIV & TB treatment adherence counselling
- Stock management
Find patient record
Register a patient
dhis2
Data
Data
District
Province
Ministry of Health
Governance
Automated feedback, motivational messages and follow up action list
Automated APE performance reports
Surveillance and response
Commodity forecasting
Medicine Kit
Diagnostic
Forms and Manuals
Uniform and PPE
APE KIT
Free Calls
Diagnostic algorithm
Patient, health promotion, and stock inventory data
Free Calls
Training and support
Suppliers
Other APES
Individual
Training, support, supply, and referral of TB/HIV patients for treatment adherence counseling
Community
APE
Health center supervisor
Central medical stores
Health promotion, treatment, and follow-up
Patient referral

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Advantages of using upSCALE

- Bring health services closer to the patient;
- Reduce clusters of patients in health facilities;
- Serves as an orientation guide for the APEs
- Support the APE in the registration of Household, Health promotion, diagnosis and treatment of patients in the community;
- Reduce errors in diagnosis, treatment (dosing and medication management);
- Digitization of health services at community level;
- Ensure the flow of information (data/forms, weekly and monthly reports);
- Ensure monitoring through calls and messages in the closed user group (APEs, Supervisors and Coordinators);
- Enable real-time data availability for decision making.

Current challenges

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Challenges:

- Funding gaps and delay impact implementation of field activities and hindering payment of services required to ensure the platform remains operational;
- Lack of sustained donor funding has a negative impact on allowing activities to continue uninterrupted. Such as the case of 21/22;
- Obsolete mobile devices and damaged solar panels in locations where upSCALE has been implemented;
- Lack of grass roots mobile device repair and replacement investment;
- Challenging partner coordination efforts.

Areas to support with future investments

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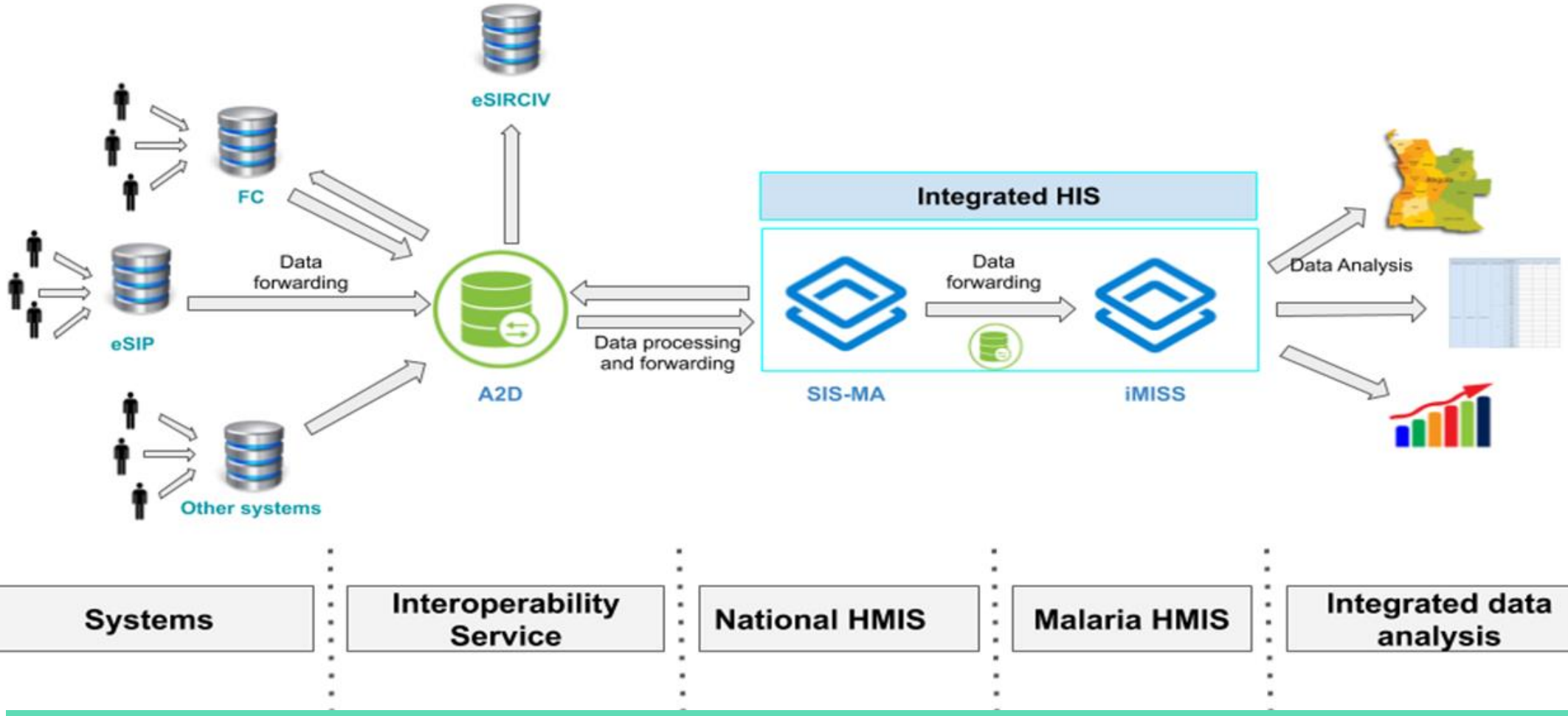
Sustaining current workforce and scaling to all APEs

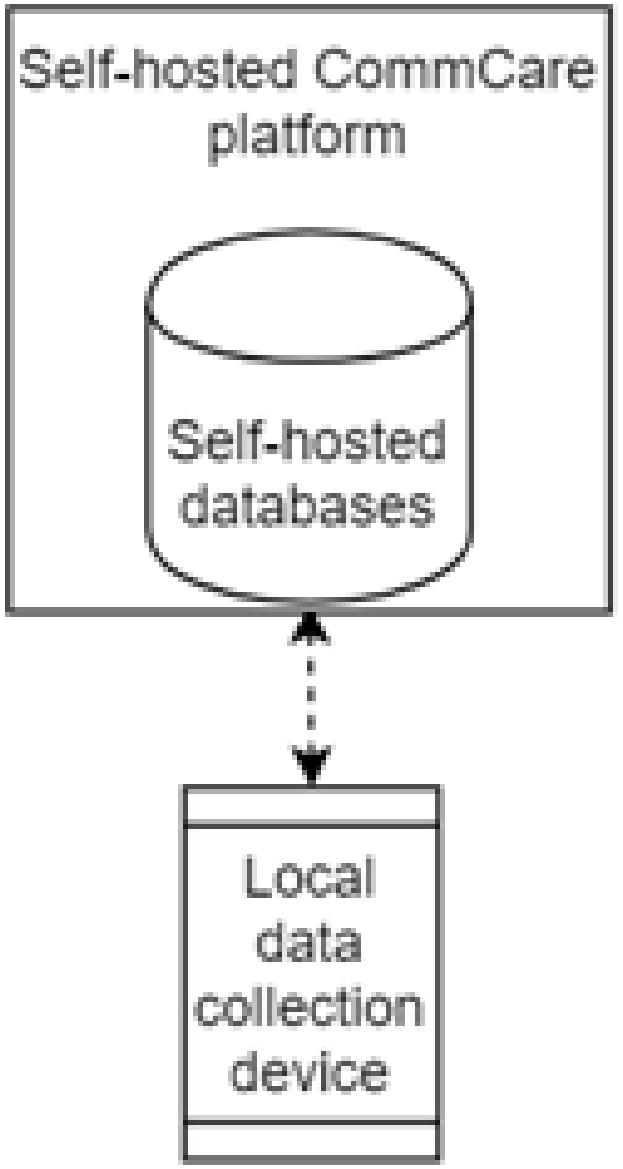


CHIS DATA INTERGRATION INTO OTHER SYSTEMS (SISMA/iMiSS)

SUSTAINABILITY OF HOSTING: Moving away from cloud-based DIMAGI hosting to self-hosting

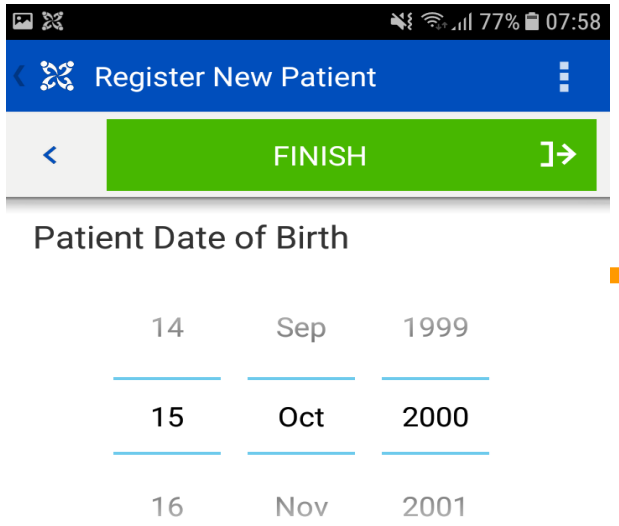
PHASE 1

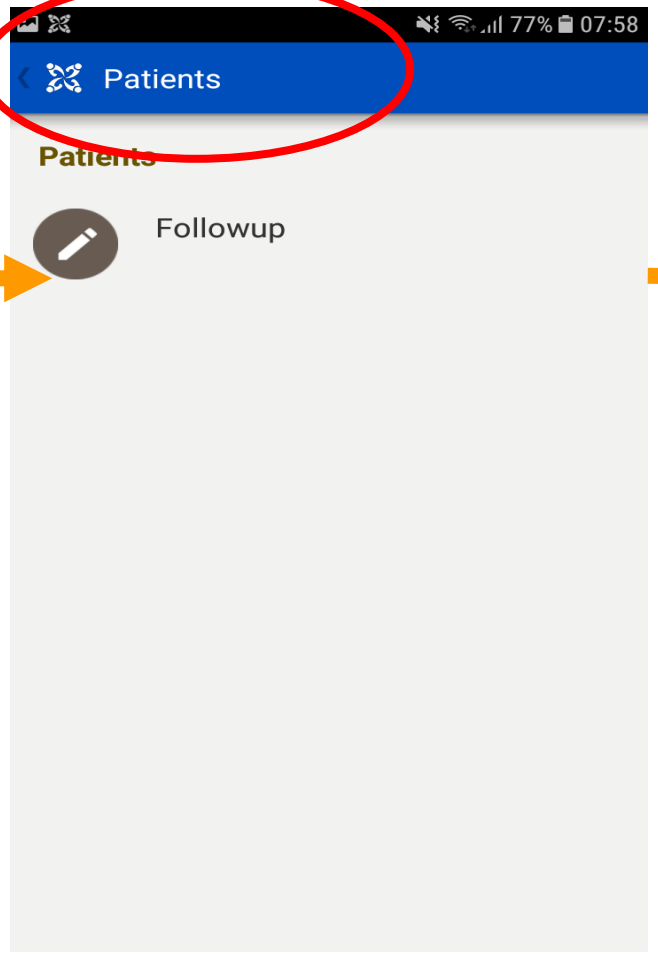
- Space on APE community server already identified and safeguarded for upSCALE database
- Capacity building of national staff – individuals to be identified
- Infrastructure of server support required for migration and QA
- DIMAGI briefed and have outlined a strategy and prepared to support the process
- DIMAGI TA time would be required during the early stages for migration to ensure capacity, data integrity and DQA.

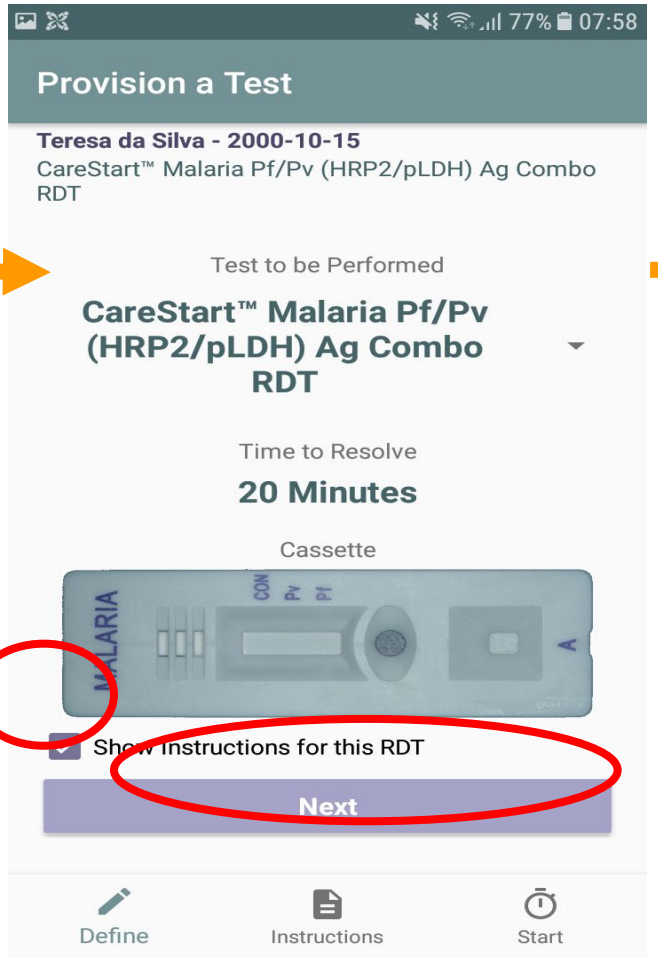


Point of Care Diagnostic tool integration for optimisation

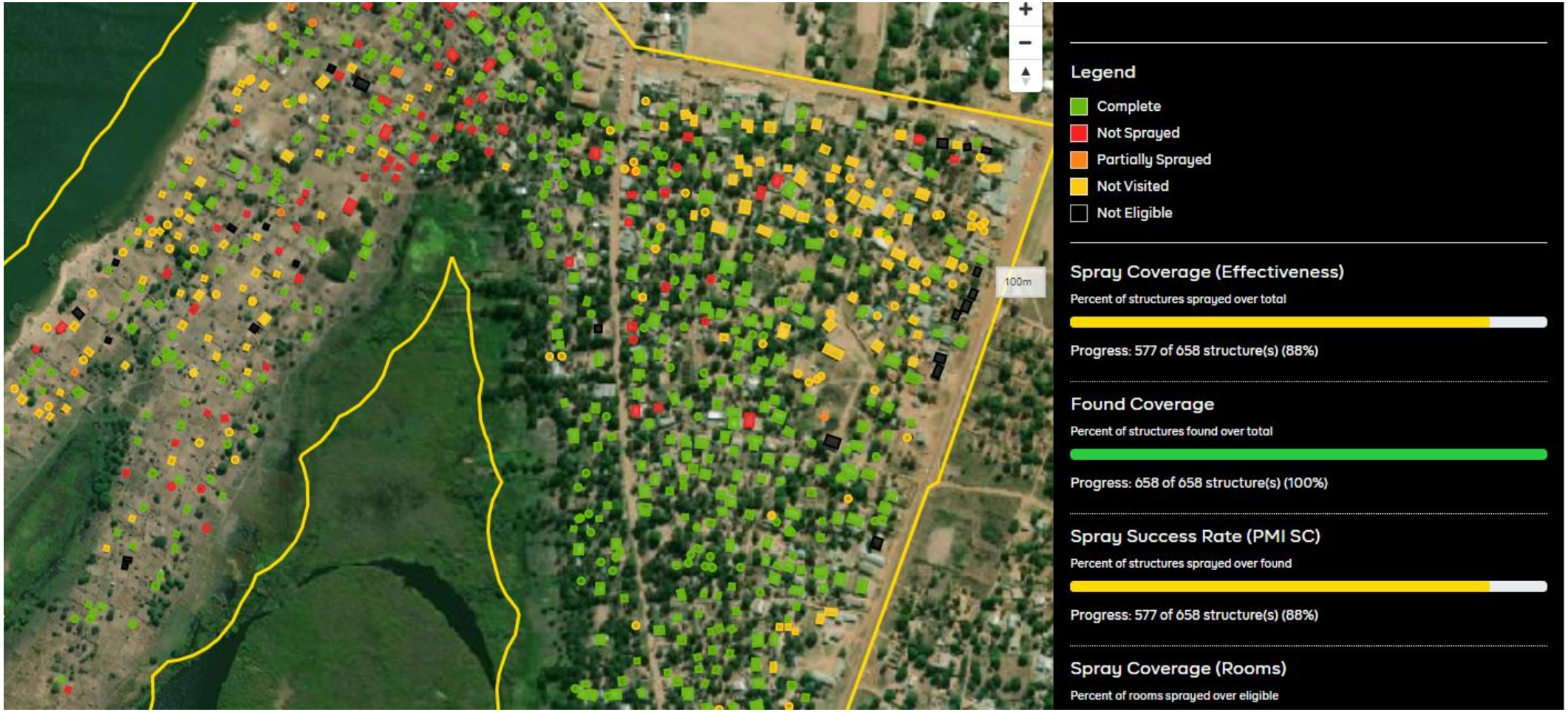
Malaria consortium have been approached by DIMAGI and Audere to test a new mRDT software to integrate into upSCALE that improves quality of RDT testing and improved correct diagnosis to prevent incorrect prescription of antimicrobials.







Integrating upscale data into campaign platforms



PATIENTS
179.21K

TOTAL CASES OF ALL PNEUMONIA
5400

CASES OF SEVERE PNEUMONIA
1633

TOTAL REFERRALS
48.69K

PATIENTS REFERRED
43.35K

AMOXICILLIN TREATMENT PATIENTS
3401

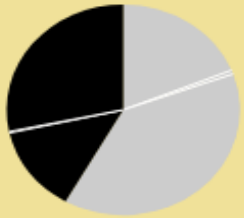
CASES FULLY RECOVERED (based on Illness follow up only)
134.42K

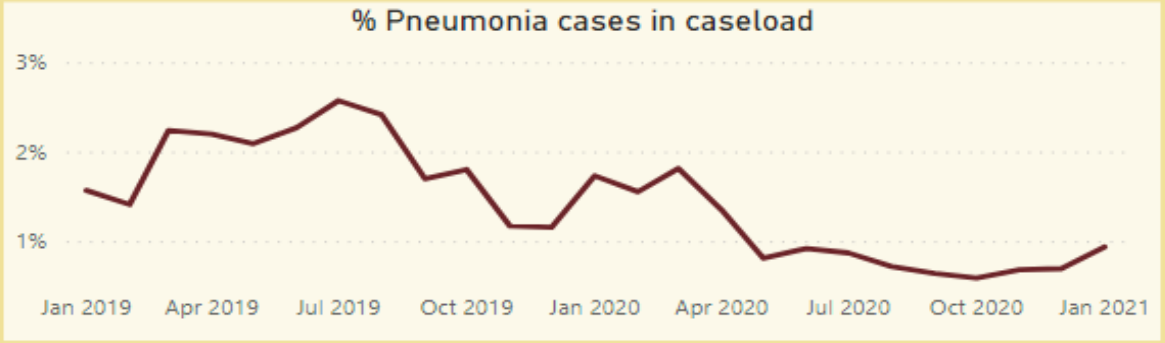
% PNEUMONIA CASES IN CASELOAD
1.45%

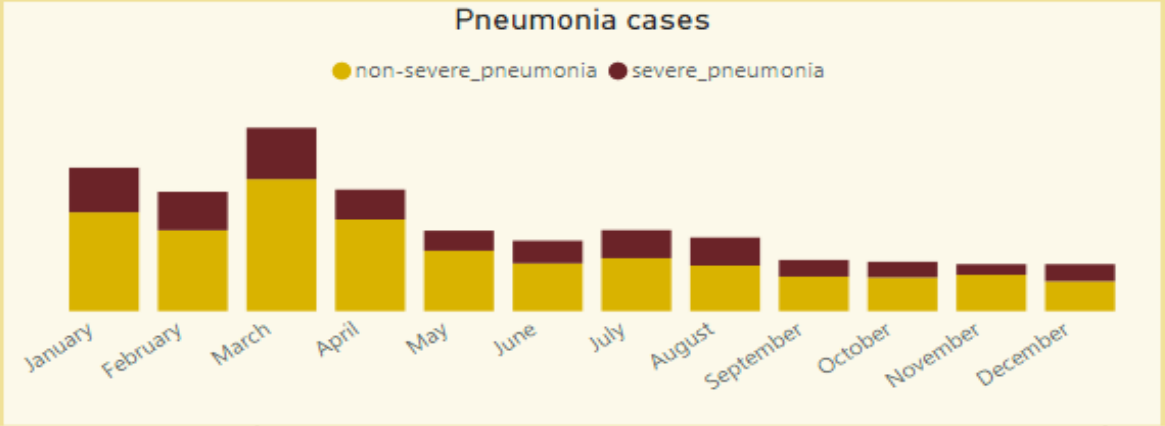
TOTAL APEs REPORTING
910

Province, District

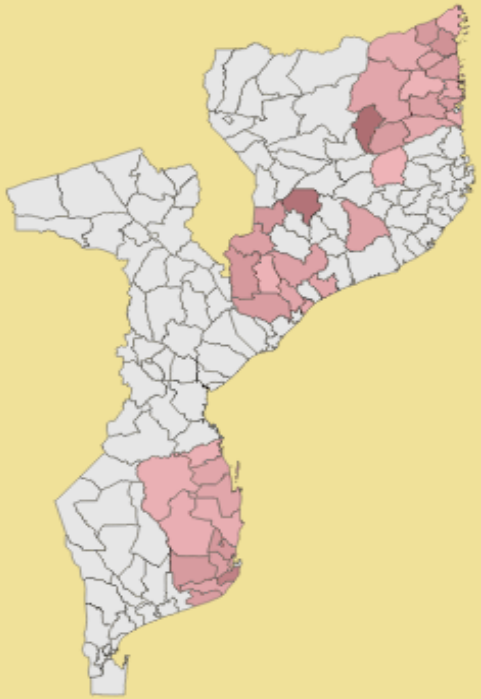
All







Cases by district



BIG DATA VISUALISATION

Final thoughts …

upscale has the capacity to be one of the most detailed surveillance tools in community case management globally, capturing geo/temporal data at individual level

It could support malaria elimination efforts through being adapted to provide case-base notifications and supporting other systems such as iMiSS

With the right investments (financial and TA), upscale can be sustained and embedded firming within MOH.

Its existing current scale, eco-system and open source modelling, means it is able to become interoperable and support data flow between routine and campaign systems which can improve health system strengthening and avoid duplication efforts and streamline a single platform solution.

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Thank you

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