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upSCALE: Strengthening mobile health to improve disease surveillance and community-based services in Mozambique

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Agentes Polivalentes Elementares (CHWs) Programme in Mozambique

- Known as community doctors.
- To date there are 7,329 APEs trained on the programme and, by 2024, the goal is to reach 8,800 APEs covering most regions across the country.
- Selected by their communities.
- Undertake a 4–5-month course.
- Supervised by the closest health facility-nominated supervisor.
- Provide curative (20 percent) and preventative services (80 percent).
- Should oversee approx. 500–2000 families in their community and visit approx. five households/day.



Services provided

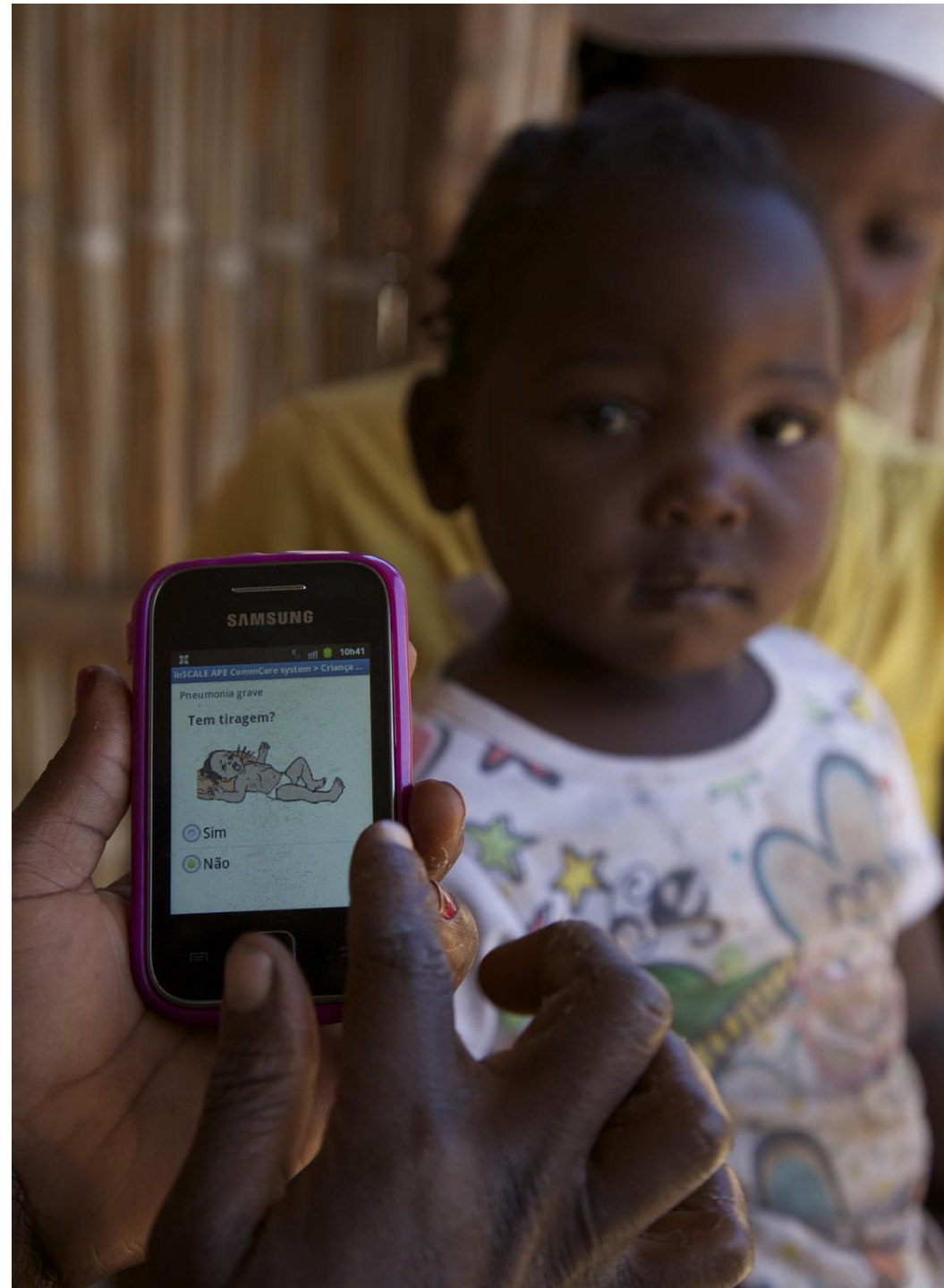
Home visits: Registration of households (births and deaths), provide health promotion, education and evaluation of disease prevention practices

Diagnose and treat malaria, diarrhea, pneumonia (under-fives)

Other services: identify danger signs and malnutrition, family planning, monitoring of newborns, pregnant and postpartum women, patients with HIV and TB, complete childhood vaccination.

What is upSCALE?

- A Ministry of Health (MoH)-led digital health platform built for community health workers and supervisors in Mozambique.
- Implemented with the support of Malaria Consortium and UNICEF since 2016, with financial support from DFID/UK Aid.
- Incorporated by MoH into its new national strategy for APEs, with aims to expand to the entire country by 2024.



Coverage areas

- Seven out of 10 provinces currently use the platform in country.
- Number of users registered on the platform, by province, as of 1 October 2022:

Inhambane: 260 APEs; 100 supervisors (360 total)

Zambezia: 710 APEs; 175 supervisors (885 total)

Cabo Delgado: 477 APEs; 165 supervisors (642 total)

Maputo Province: 182 APEs; 59 supervisors (241 total)

Nampula: 634 APEs; 133 supervisors (767 total)

Gaza: 265 APEs; 98 supervisors (363 total)

Sofala: 250 APEs; 47 supervisors (297 total)

Total = 3,555 users registered on the platform to date.



Key:

- upSCALE implementation in progress
- Expansion planned for 2024

Objectives



APE

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



Health center supervisor

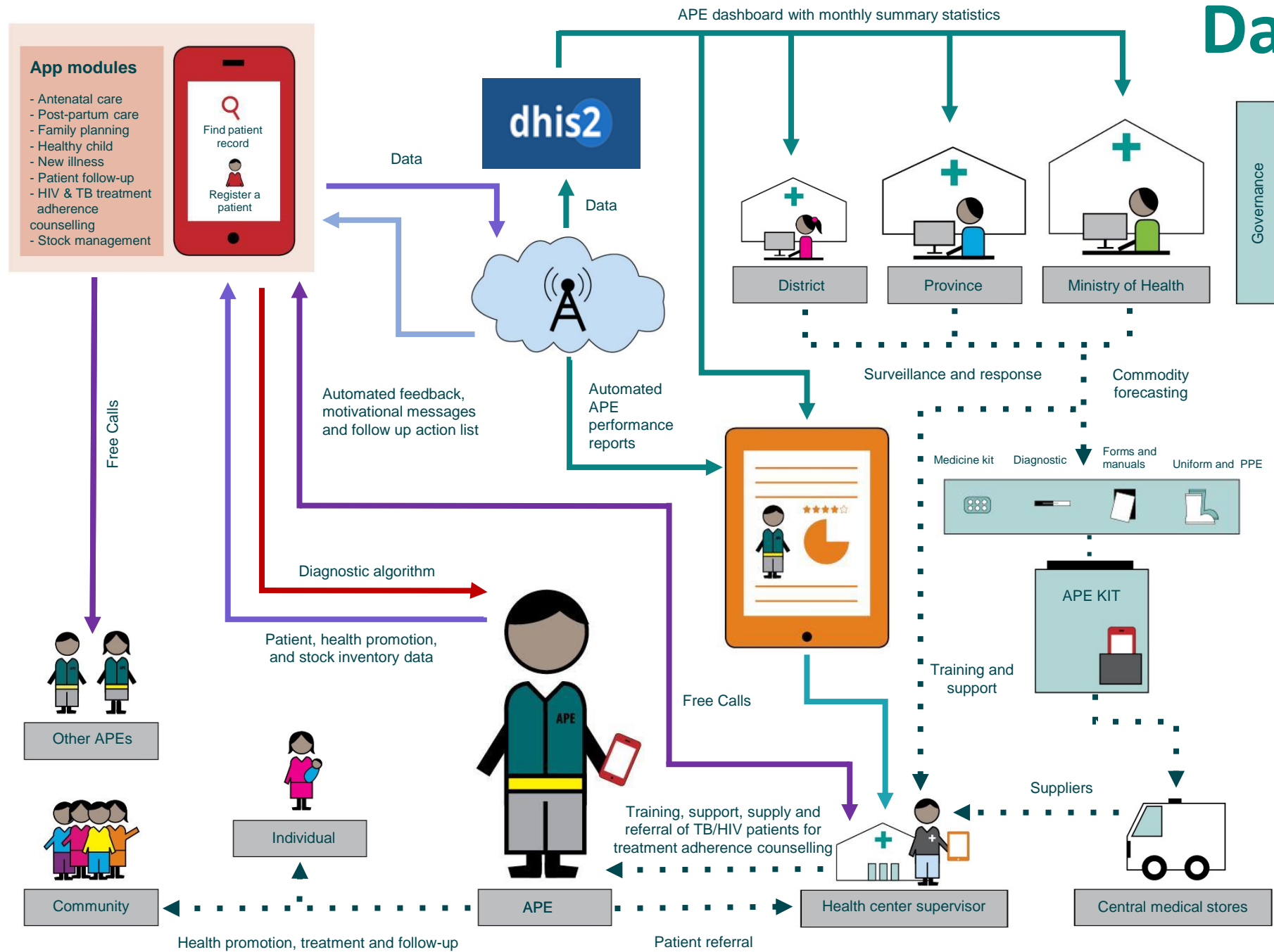
Support health facility supervisors to monitor APE performance and stock management using an integrated tablet-based supervision application.

dhis2

Improve quality and usage by providing near real-time patient data from the upSCALE app that will in future flow to the national health information system built on DHIS2 for monitoring, evaluation and decision-making at multiple levels.



Data flow



UpScale: APE app summary



Household management



User registration



Postpartum visit



Nutrition & health card



Pregnancy visit



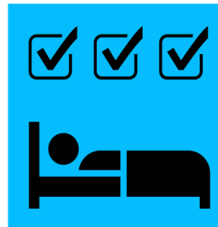
Referrals and Follow-up



Stock Management



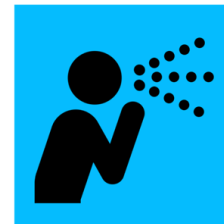
Births & deaths monitoring



Screening newborn, infant, under five and over five years



HIV



TB



Patient registration



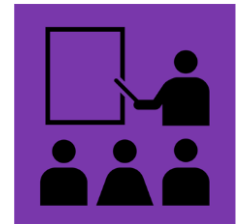
Patient services



ECD module



First Aid module



Health promotion



Improved supervision reports

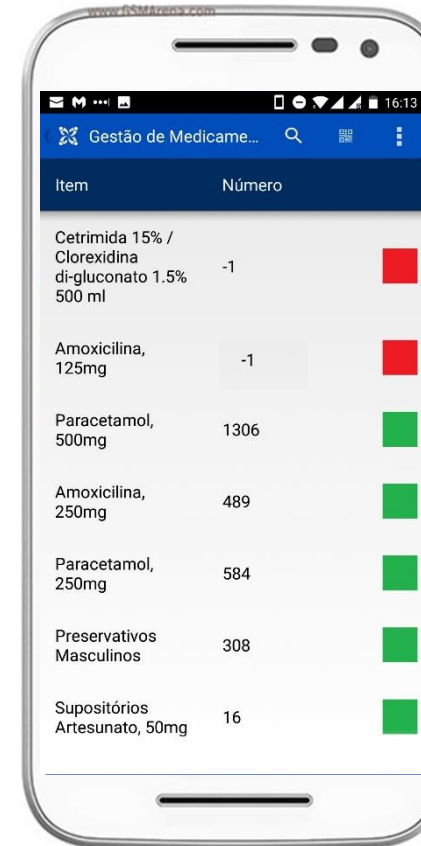
Mobile applications

Modules of the APE app:

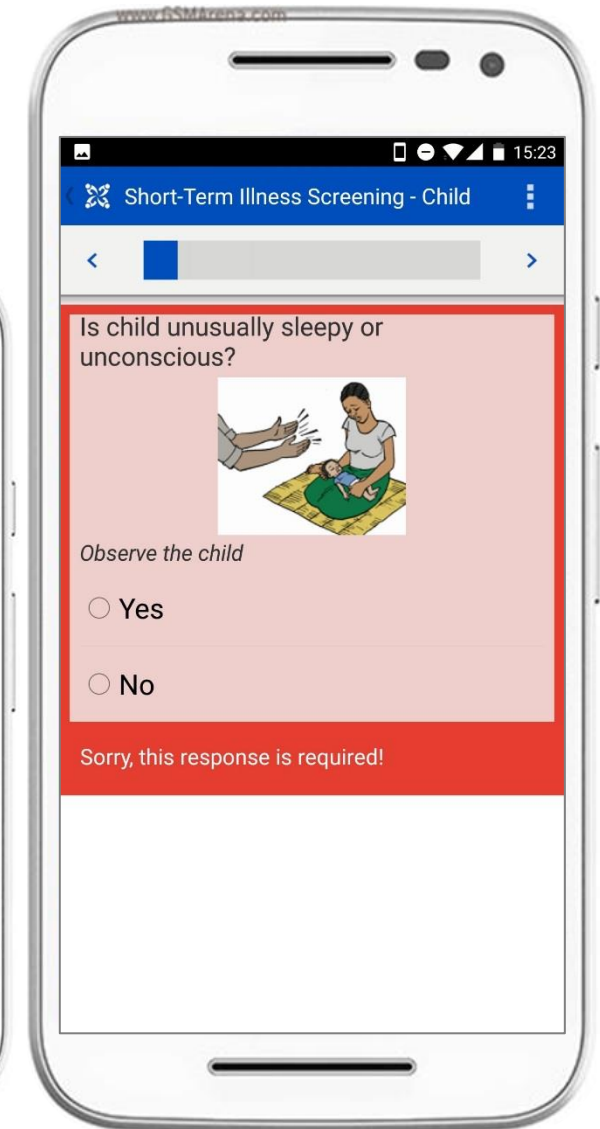
- registration and management of household members
- patient screening
- health promotion
- registration of births and deaths
- stock management
- monthly activity report
- support and feedback form.

Modules of the supervisor app:

- schedule supervision visits
- assessment of APE competencies
- APE inventory monitoring
- monthly APE reports
- technology troubleshooting guide.



Supervisor app –
APE Stock review



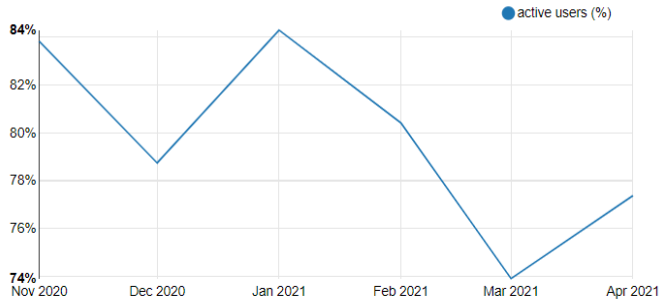
APE app –
Screening/triage

CommCare Web and DHIS2

Data
visualisation
for decision-
making

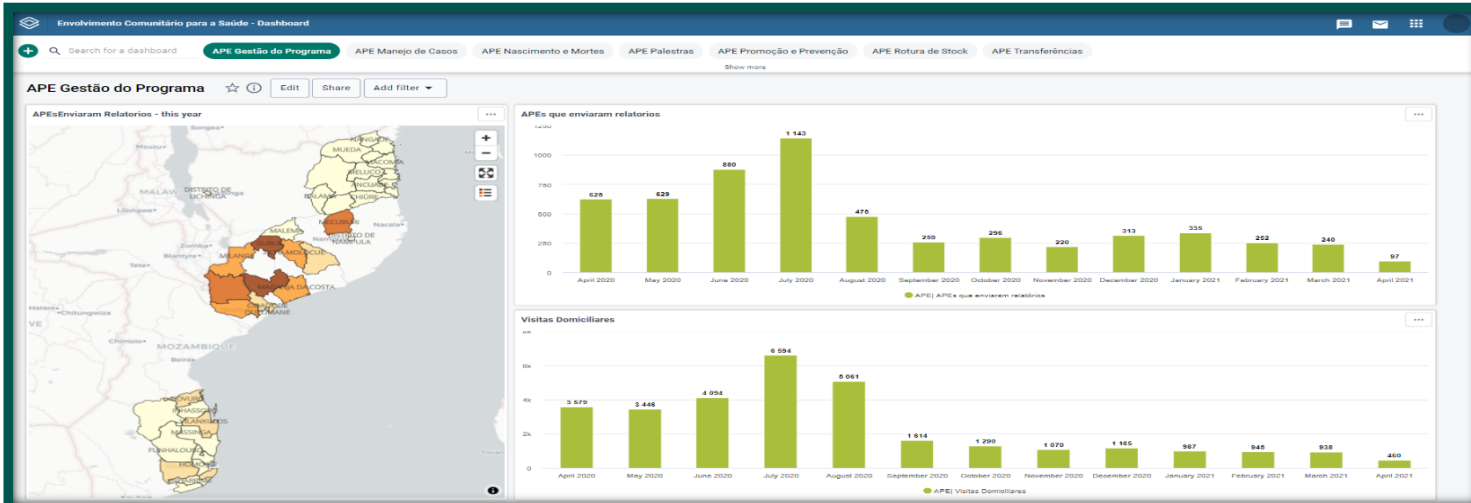
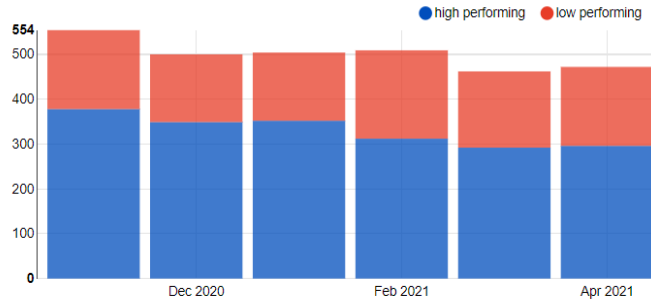
Tendência de usuários ativos

Proporção de usuários ativos (enviando pelo menos um formulário) ao longo do tempo.



Tendências do usuário de alto / baixo desempenho

Como a contagem de usuários de alto / baixo desempenho mudou nos últimos seis meses.



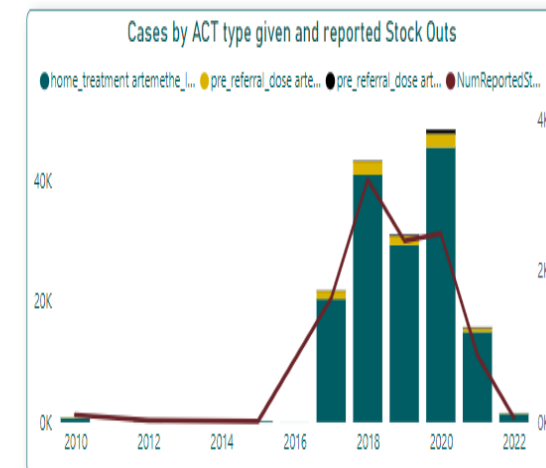
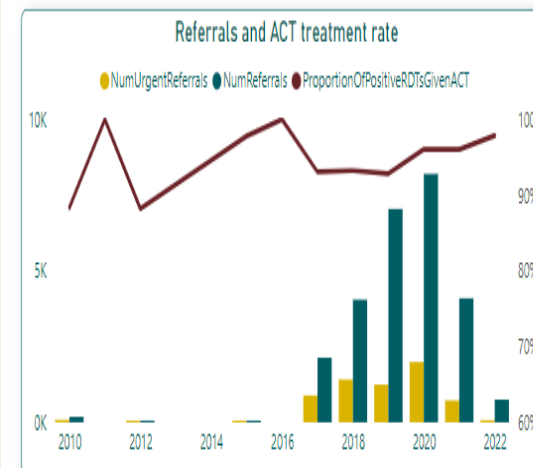
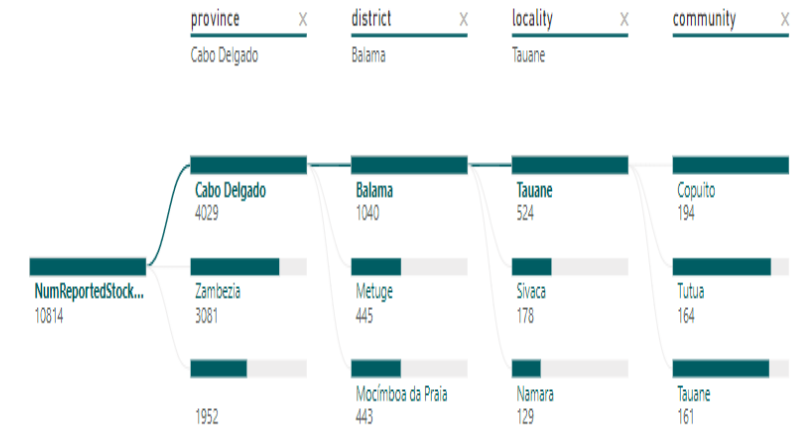
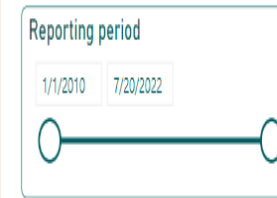
Power BI

Data
visualisation
for decision-
making



Number of malaria indicators collected through upSCALE

#	Indicator
1	№ of RDTs performed <5 years
2	№ of RDTs performed ≥ 5 years
3	Total № of RDTs performed (<5 years & ≥ 5 years)
4	№ of confirmed malaria cases <5 years
5	№ of confirmed malaria cases ≥ 5 years
6	Total № of confirmed malaria cases (<5 years & ≥ 5 years)
7	№ of Artemeter + Lumefantrina (AL) treatment <5
8	№ of AL treatment ≥ 5
9	Total № of AL treatments (<5 years & ≥ 5 years)
10	Total № of referrals to health facilities
11	Total № of lectures given on malaria at community level
12	№ of community deaths — Child <5 years
13	№ of community deaths — Child ≥ 5 years
14	Total № of community deaths (<5 years & ≥ 5 years)
15	№ of male consultations
16	№ of female consultations
17	Total № of consultations



Results

upSCALE has been developed to improve quality and coverage of health services at the community level by addressing three key APE programme challenges: inadequate adherence to clinical guidelines; insufficient supply of commodities; and lack of access to community health information. The platform:

- brings health services closer to the patient
- reduces clusters of patients in health facilities
- serves as an orientation guide for the APEs
- supports APEs in patient household registration, health promotion, diagnosis and treatment in the community
- reduces errors in diagnosis and treatment (dosing and medication management)
- digitises health services at community level
- ensures rapid access to APE activity data (forms of weekly and monthly reports)
- ensures monitoring through calls and messages in the closed user group (APEs, supervisors and coordinators).



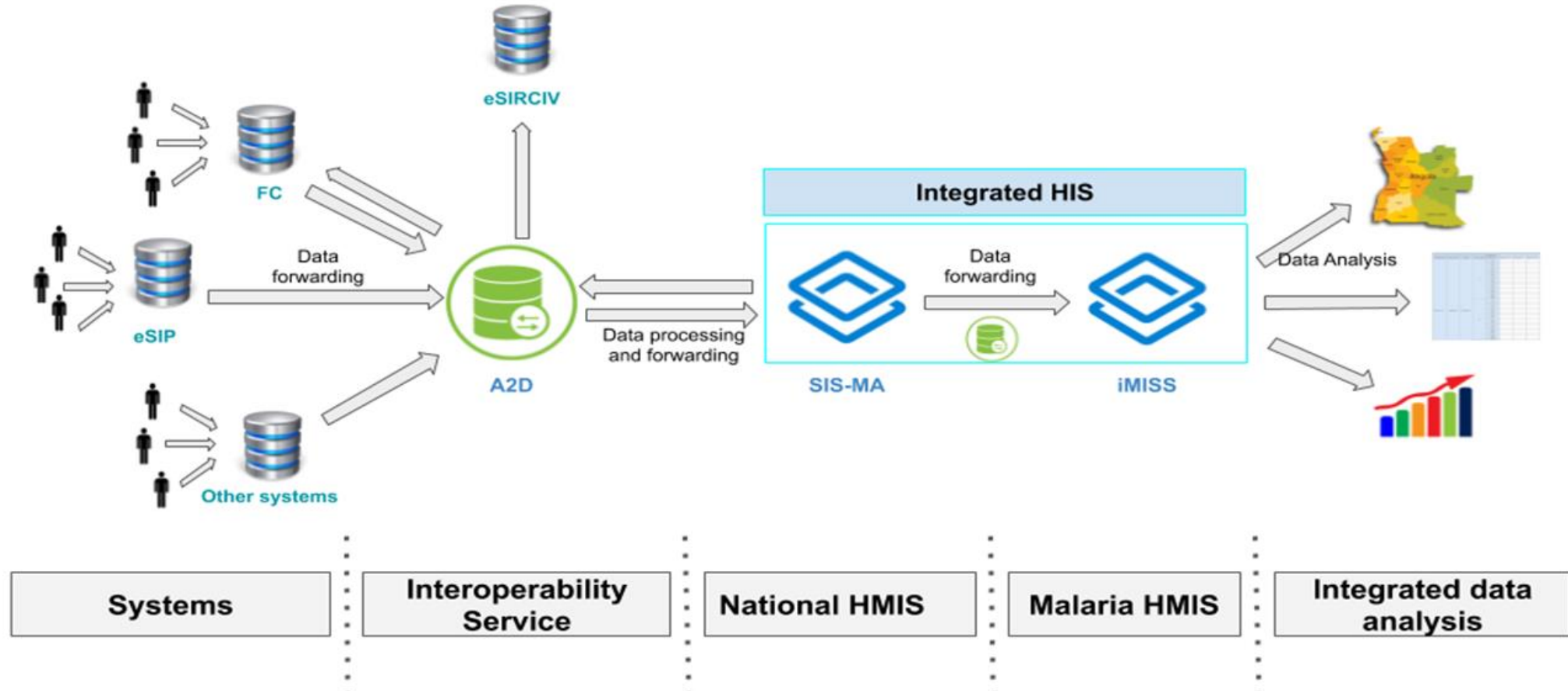


Future of upSCALE: Phase II

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CHSS data integration into other systems (SISMA/iMISS)

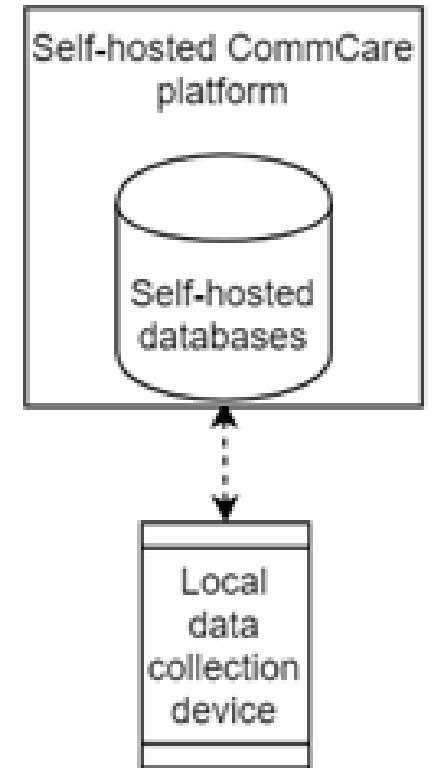


Integrating upscale data into campaign platforms



Sustainability of hosting: Moving away from cloud-based hosting to local hosting

- Partners briefed to support scoping process for a local infrastructure that can support community-level data generated from upscale.
- Capacity strengthening of national staff — MoH individuals to be identified and trained to lead on the management of the platform.
- During early stages, technical assistance (TA) will still be required from DIMAGI (service provider) to guarantee a successful migration from cloud to local server, data integrity and data quality assurance.



Conclusion

1. upSCALE is a digital community health information platform that facilitates the delivery of quality service through more accurate diagnosis and, consequently, timely treatment.
2. It can strengthen community-level surveillance of disease outbreaks and trends through real-time data capture and data granularity.
3. It has the capacity to be one of the most detailed surveillance tools in community case management globally, capturing geodata at the individual level and supporting improved targeted resource planning and mobilisation.
4. Its current scale, ecosystem and open-source modelling allow it to become interoperable and support data flow between routine and campaign systems.
5. With the right investments (financial and TA), upSCALE can be sustained and embedded firmly within Mozambique's MoH.

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