Integrated digital microplanning for immunization campaigns in UNICEF: current activities and opportunities

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Campaign Digitalization meeting
Nairobi, Feb 21-22, 2024

UNICEF's Digital Health Vision

A digitally-enabled health system where countries effectively adopt technology solutions that prioritize **reaching** the most marginalized and vulnerable children, adolescents and families with **information and services**.

In doing so we strengthen the ability of health systems to **collect, analyze, and use health data** to continually improve the reach and quality of services.

Gavi Digital Health Information Priority Areas

SYSTEMATICALLY

Identification and reach of zero-dose and under-immunised children with geospatial applications, smart maps, digital micro-plans, satellite identification of settlements and community e-registry

Digital supply chain information systems with timely data visibility, triangulation and use at service delivery points and national/sub-national levels

Real-time planning and monitoring of immunisation campaigns with timely reporting, insightful dashboard, coordination and communication

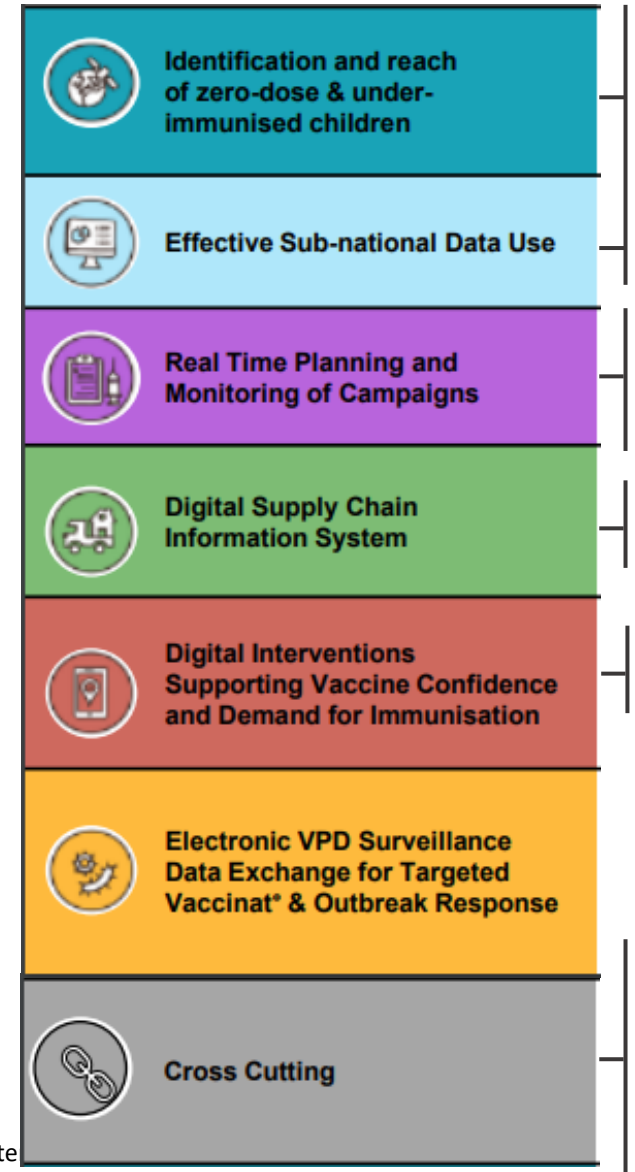
OPPORTUNITY BASED

Effective sub-national data use with improved data triangulation, dashboards, visualisation, mechanisms to aid decision-making and systems interoperability

Electronic VPD surveillance data exchange for targeted vaccination and outbreak response with timely data capture, sharing, analysis, visualisation linked to decentralised testing data

Digital interventions supporting vaccine confidence and demand for immunisation to help build trust and enhance engagement in support of children, their caregivers, communities, health workers and health systems

UNICEF DHIS areas of work



- **Geospatial population estimates**
- Satellite identification of settlements
- **GIS-based and digital microplanning**
- Triangulation of Electronic Immunization Registries (EIR) and Birth registration for identification
- Zero dose sensitive digital health community platforms
- Predictive analysis to prevent stock outs
- **Integrating RTM data into or aligned with national HMIS indicators**
- **Improve the effectiveness and quality of VPD campaigns through technical guidance for use of RTM approaches**
- Logistics Management Information Systems
- Cold Chain Real-time Monitoring
- Global TRVST Network
- Use of digital platforms for demand generation / increasing vaccine confidence / handling misinformation
- National Digital Health Information Costed Country Roadmap
- Building institutional capacity and enabling environment for GIS (“Geo-enabling the HIS”)
- Health workforce registries
- Geolocated Health facility and vaccination sites master List
- Digital Public Goods and Smart Guidelines / Target Software Standards

Inte

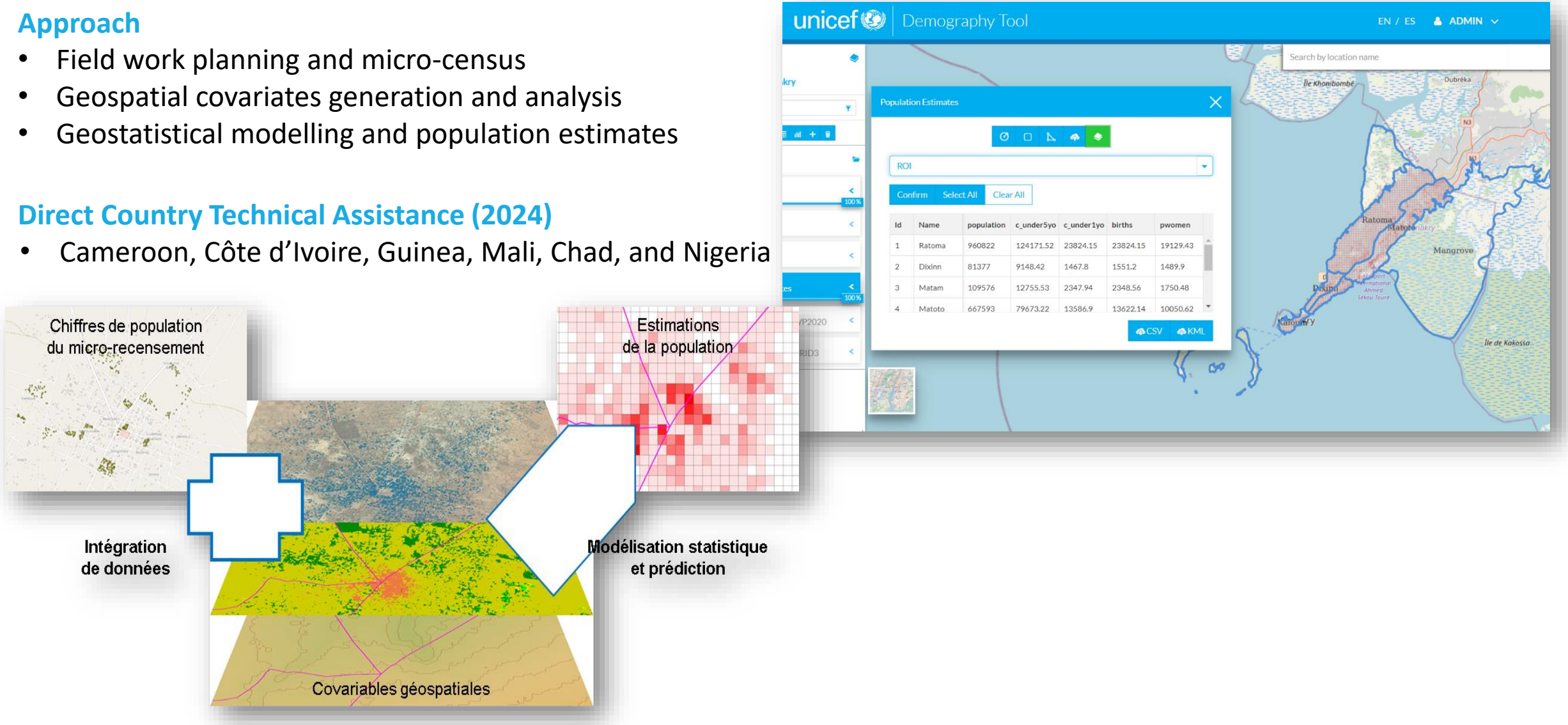
Geospatial population estimates

Approach

- Field work planning and micro-census
- Geospatial covariates generation and analysis
- Geostatistical modelling and population estimates

Direct Country Technical Assistance (2024)

- Cameroon, Côte d'Ivoire, Guinea, Mali, Chad, and Nigeria



GIS-based and digital microplanning

Country-level implementation

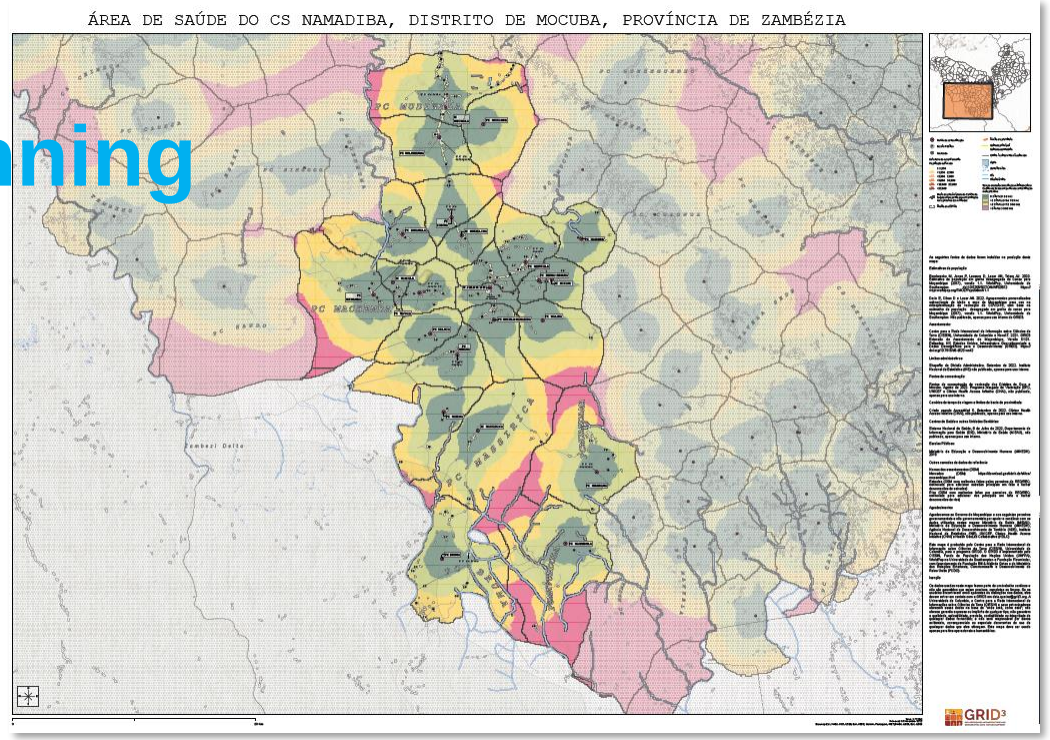
- Satellite based identification of settlements and geospatial population estimates
- Geographic accessibility mapping
- Travel time-based catchment areas definition
- Engage local level health staff for definition of local geography
- Build govt's capacity for sustained GIS management and oversight

Direct Country Technical Assistance (2024)

- Madagascar, Mongolia, Mozambique, South Sudan, Uganda, Zambia, Malawi, Cambodia

Global Activities

- Development of guidance and toolkits (Geo-enabled microplanning handbook, costing tool- under development)
- Identification of Standards and requirements (Digital Adaptation Kit, Health facility Registries requirements – under development)
- Shaping global GIS agenda through global and regional partnerships (GHFD, WHO GIS center, MORU Tropical Health Network)



GIS-microplanning for integrated COVID-19 adolescent campaigns and routine immunization (Mozambique)

Real Time Monitoring

WE KNOW THAT

Supplementary Immunization Activities (SIAs) allow for the raising of broad population immunity and reducing/interrupting VPD transmission.

HOWEVER

A paper-based system makes it difficult to undertake a course of action during a short time frame for vaccination campaigns.

Digitally enabled Real-Time Monitoring (RTM) is increasingly implemented in countries during or immediately after mass immunization campaigns and SIAs to **accelerate data transmission** and **enable immediate data use and corrective actions**.

EVIDENCE

Quick actions during time-bound SIAs can help **identify gaps** (poorly vaccinated communities, supply stockouts, insufficient outreach, etc.), with **data driving corrective actions** that can result in **improved accountability and quality of vaccination campaigns**.

THE BROAD PICTURE

Integration with the HMIS platform is crucial to getting the data into the national repository and **triangulating with other information**.

1	Planning phase

- Stakeholder consultation, national leadership
- Tools development/adaptation (testing, training)
- Micro plan (vaccination site, target population, vaccinator, volunteer)

2	During campaign

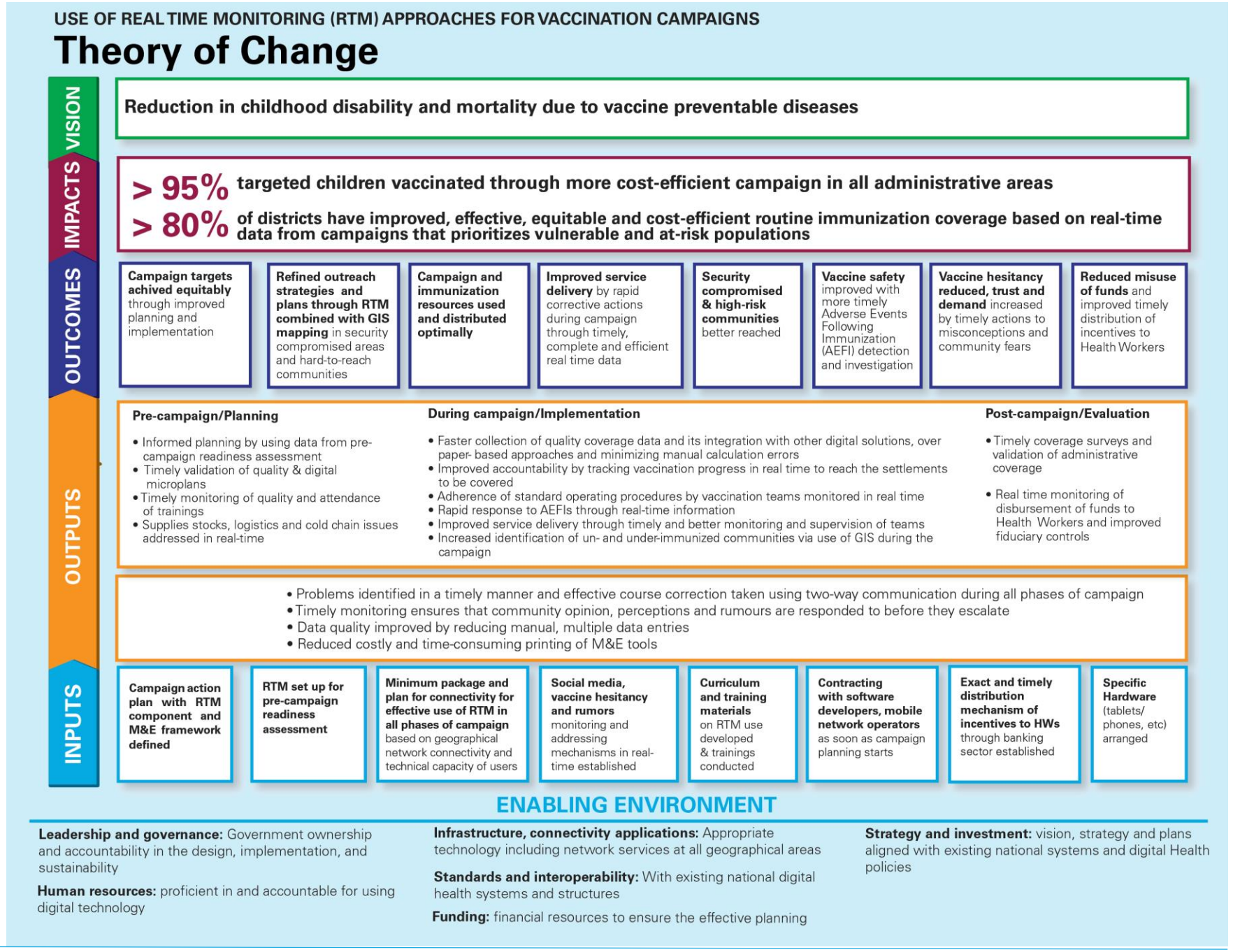
- Monitoring of progress vis-à-vis daily target
- Monitoring of missed children
- Monitoring of supplies
- Corrective actions

3	After campaign

- Rapid Convenience Monitoring (RCM)
- Funds disbursement monitoring
- Evaluation of campaign coverage

Real Time Monitoring

Countries will be able to **rapidly address needs and gaps** during campaigns through better planning, implementation and monitoring to improve campaigns coverage.



Planning and Implementing Real-time Monitoring Approaches to Strengthen Vaccination Campaigns: Guidance for country partners, New York: United Nations Children's Fund (UNICEF), 2022.

RTM use cases

Bangladesh 2020
- ✓ MR
- ✓ DHIS2 for RTM and RCM

Indonesia 2017-18
- ✓ MR
- ✓ RapidPro, WhatsApp

Malawi 2022
- ✓ Polio / Cholera
- ✓ RapidPro and DHIS2

The Philippines 2023
- ✓ MR, Polio
- ✓ RT-VaMA

Pakistan 2018-19
- ✓ Measles / Typhoid
- ✓ Pre: Kobo
- ✓ Intra: RapidPro
- ✓ Post: WhatsApp

Rwanda 2022
- ✓ COVID-19
- ✓ DHIS2

About RapidPro

RapidPro enables real-time engagement, data collection and information sharing

- Open-source software platform
- Powers the way governments and development partners connect with their communities.
- Cross-sectoral digital building block

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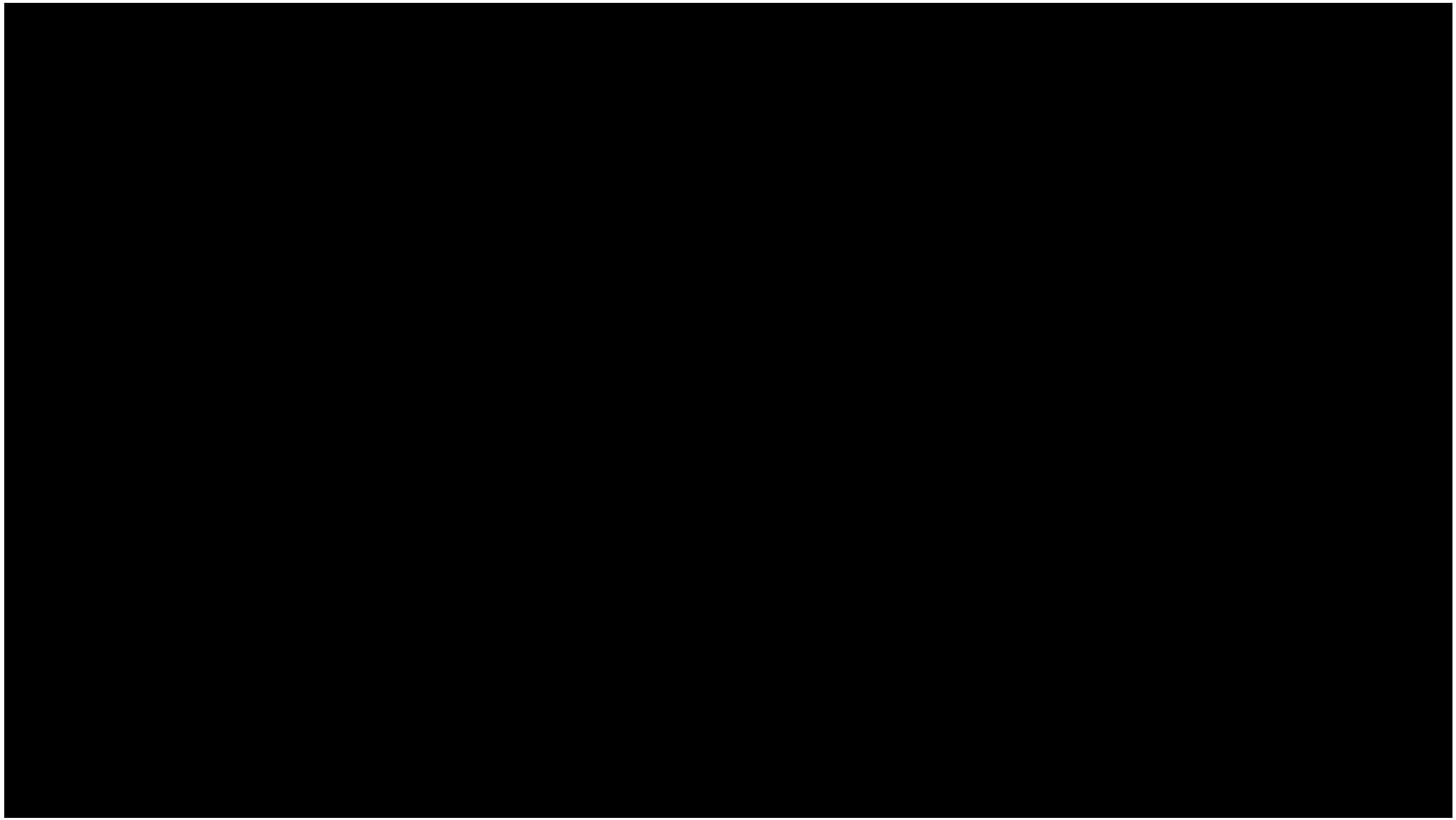
Information and Communication Technology Division

Digital Centre of Excellence

RapidPro

About RapidPro

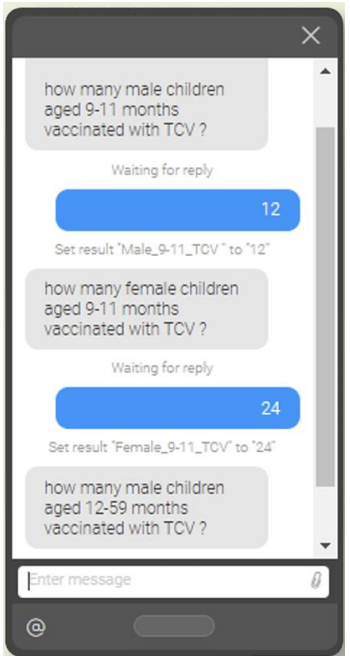


Real Time Monitoring: from pilots to scale

Approach

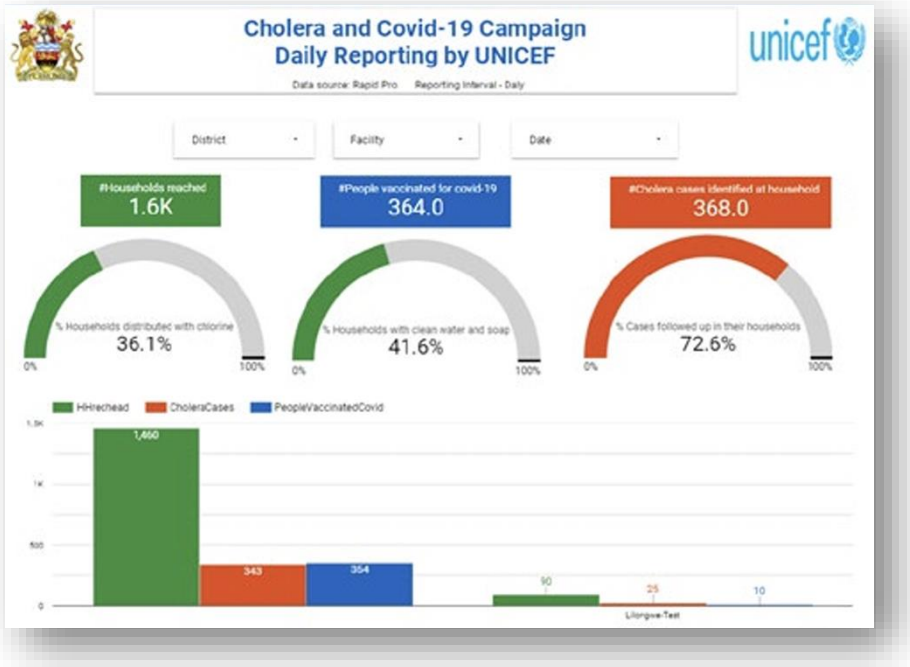
- RapidPro for RTM during national VPD campaigns in 20+ countries:
  - Child Registration
  - Vaccination Monitoring
  - Outreach Coordination
  - Vaccine Stock Monitoring
  - Client Feedback/Assessment

Malawi, 2022



RapidPro-based SMS dialogue for vaccinators to report aggregate campaign data daily

DHIS2 Tracker for facility level data COVID-19 related information systems



Integrating RTM data into national HMIS

Approach

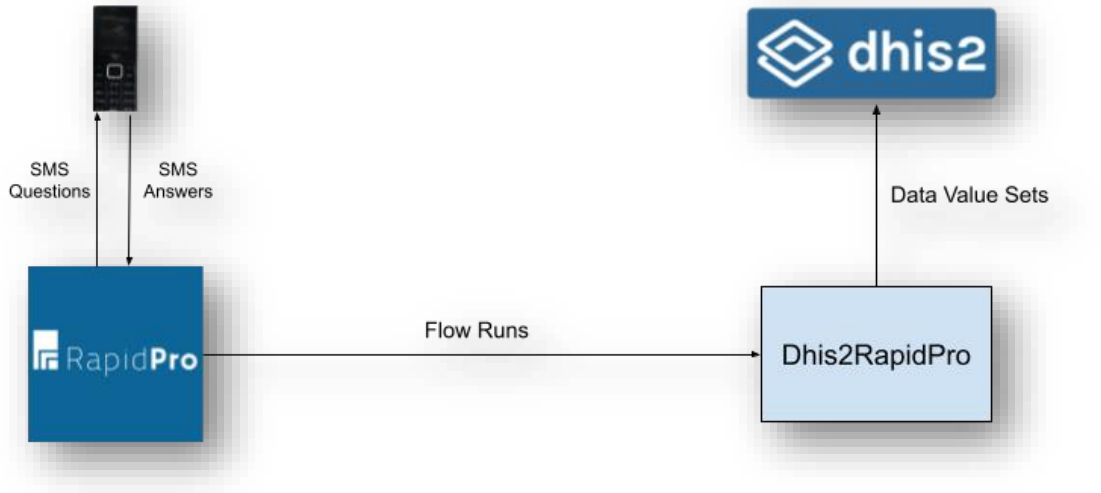
- Development of a RapidPro - DHIS2 connector for aggregated data

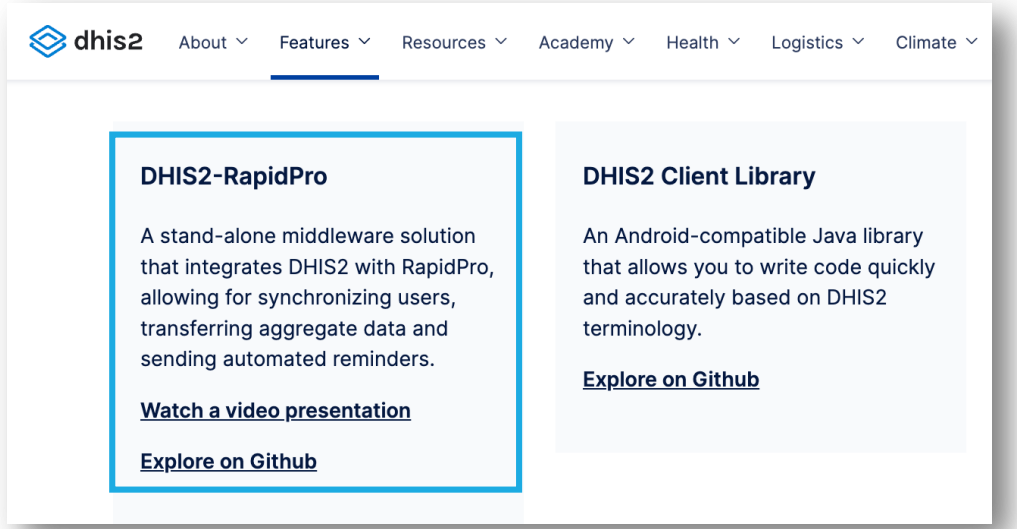
Direct Country Technical Assistance

- Zimbabwe

Supporting Global Activities

- Individual-level data for RapidPro - DHIS2 connector?





Improve the effectiveness and quality of campaigns through technical guidance for use of RTM approaches

Approach

- Identify campaign commonalities (VPD inc. C19, malaria and NTDs, and others)
- Define a common set of campaign indicators
- Development of DHIS2 metadata package
- Build govt's capacity for sustained RTM management and use

Direct Country Technical Assistance (2024)

- DRC, Ethiopia, Mozambique, Nigeria, Rwanda, Uganda

Supporting Global Activities

- Campaign digitalization package:
  - Package content and workflows
  - Guidance on tools
  - Course materials
  - Geo-enabled RTM guidance

Pulling it all together: Campaign Digitalization

What elements of the campaign needed improvement during the last rounds (i.e., microplanning, training, logistics, supervision, payment, etc.)?

What information would be useful in identifying when corrective action is needed?

Were there missed opportunities to use pre- and post-implementation data? What are they?

What parts of the campaign are the most challenging and time-consuming to implement and oversee?

Is the broader programme prepared to support the additional corrective actions that RTM approaches may detect?

How might RTM make these processes easier?

- Shared vision
- Participatory process
- Digital ecosystem
- Mapping (and automating?) decision-making processes

Thank you!

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