



Health Information Systems and Data for Action: Lessons from Tanzania

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Immunization and Vaccine Development
Program

Advancing Sustainable HPV Vaccination Programs in Africa

Nairobi, Kenya | 1, 2 and 3 October, 2025

OUTLINE



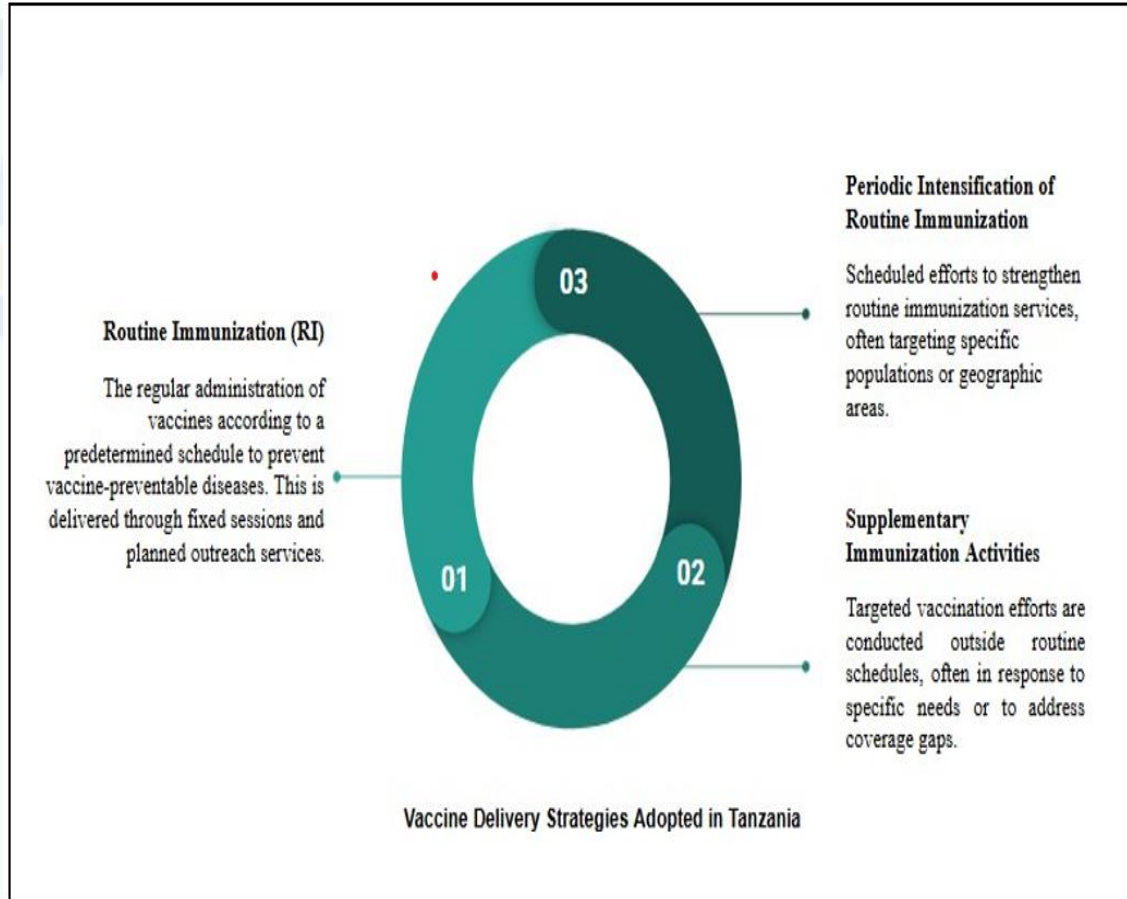
- **Background**
- **Immunization Performance**
- **Why HIS and Data for Matters for the HPV vaccine**
- **Data Management Tools**
- **Data Management (Key Issues)**
- **Data for Action (What Worked in Tanzania)**
- **What Could be Improved**
- **Recommendations for HPV vaccination**
- **Next Steps and Innovations**
- **Conclusion**
- **Call for Action**

BACKGROUND



- 31 Regions, 195 Councils in the country
- Population of 67 million people and an annual birth cohort ~2.4 million
- Lower-middle-income country
- Total area 947,300 km²
- Total <5 yrs population – 13,275,782; surviving infants, 3,175,864
- Total # of Health Facilities - >12,000
- NIS (2020-2025) governs the implementation of the Immunization Program

BACKGROUND



- Tanzania vaccinates against 14 vaccine-preventable diseases (VPDs)

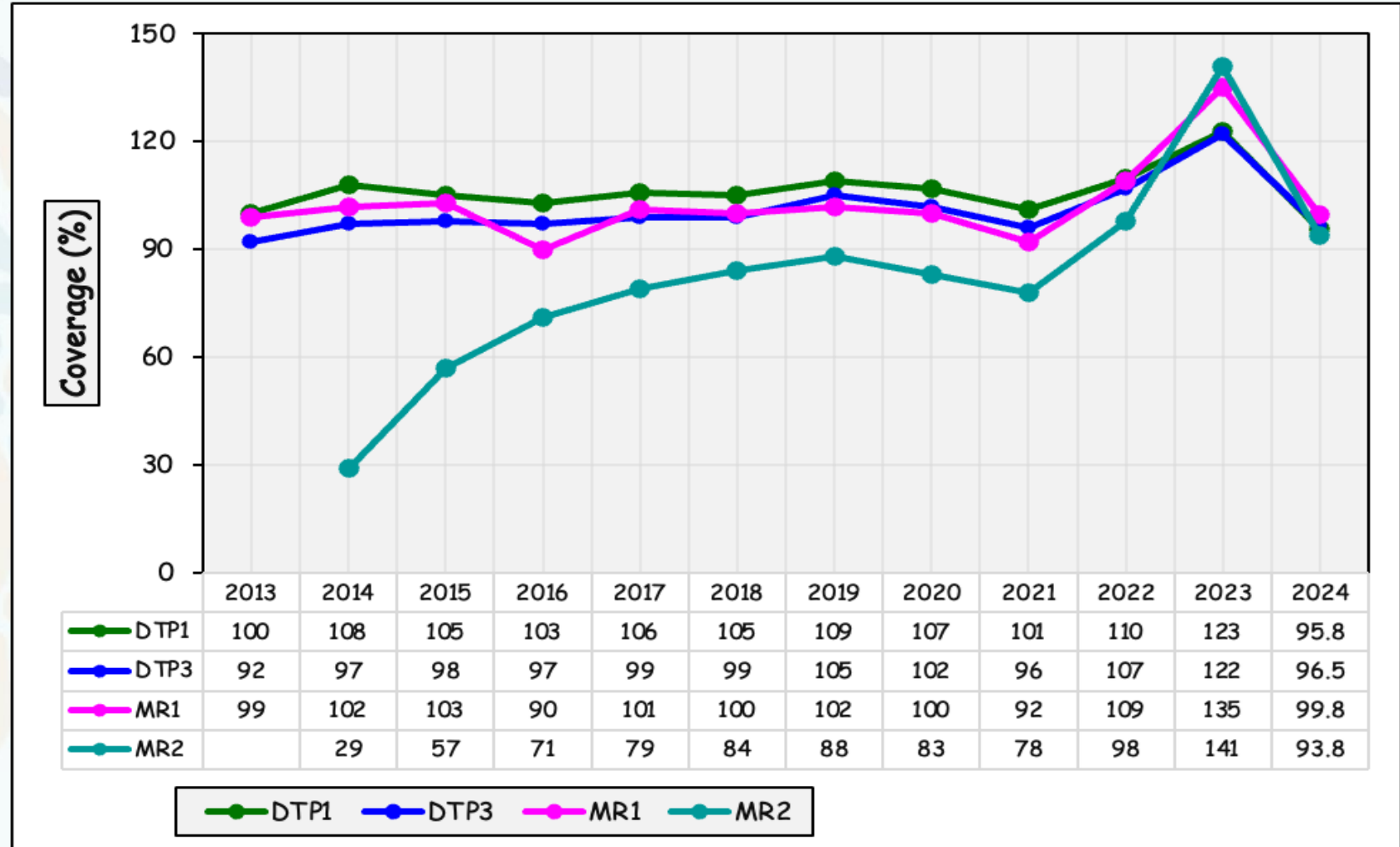
- Vaccination strategies include:

- ✓ Routine Immunization (RI)
- ✓ Periodic Intensification of Routine Immunization (PIRI)
- ✓ Supplementary Immunization Activities (SIAs)

Aim: Reduce disease transmission, morbidity, and mortality

IMMUNIZATION PERFORMANCE (ADMIN)

- Immunization coverage has been above 90% for almost all antigens with the exception of MR2
- DTP1 & 3 has remained high with an increase in 2022 and 2023
- MR2 coverage has steadily increased from 88% in 2019 to 94 % in 2024



IMMUNIZATION PERFORMANCE (HPV)



Since 2018 HPV vaccine has been part of routine immunization for 14-year-old girls

Coverage figures: First dose 59-79%, second dose 40-90%

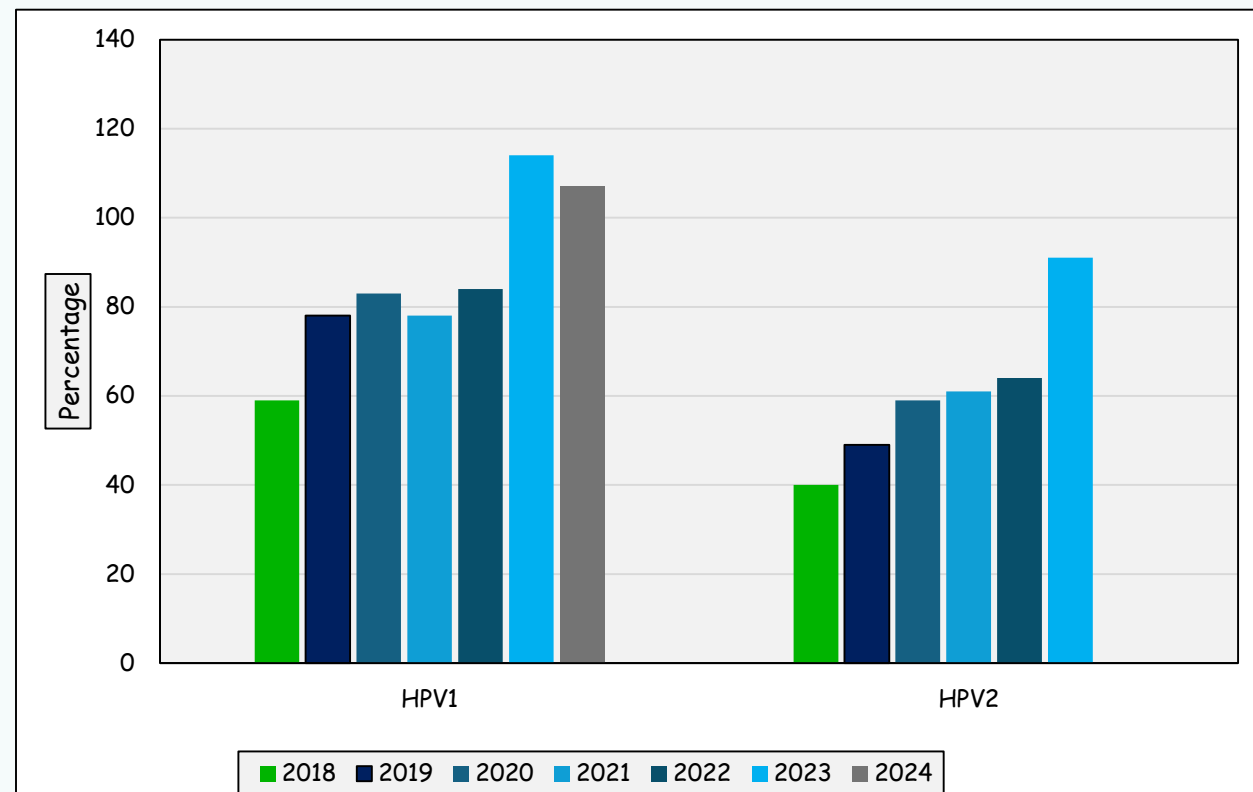
National MAC campaign (multi-age cohort) in April 2024 targeting 9-14-year-olds, ~5 million girls

✓ Target: 5,138,338 girls VS Vaccinated: 5,478,165 girls

Vaccination approaches:

✓ School-based: 88.5% VS Community-based (out-of-school): 11.5%

Reflects a strong national commitment and effectiveness of a dual delivery strategy

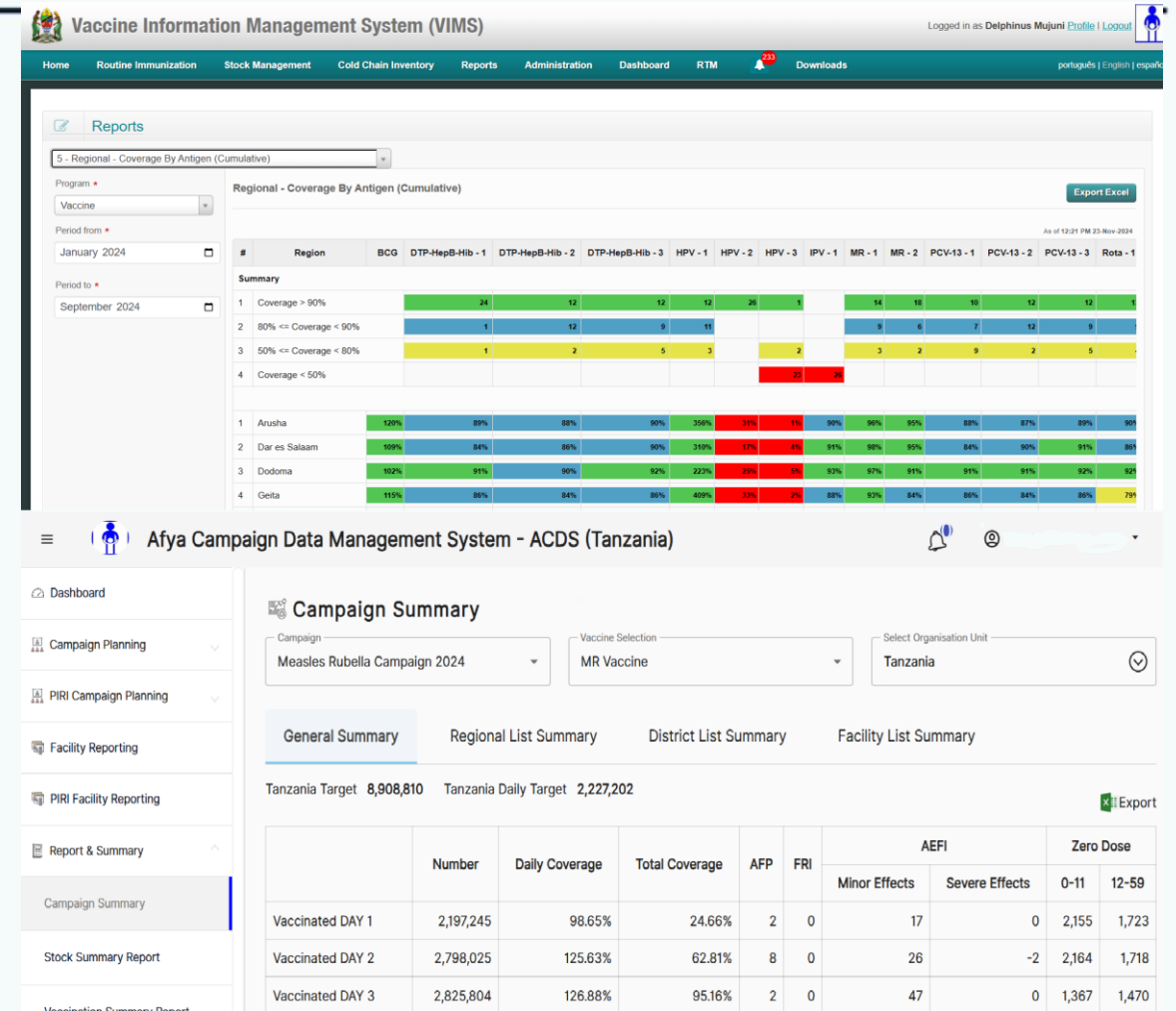


WHY HIS & DATA MATTER FOR HPV VACCINE

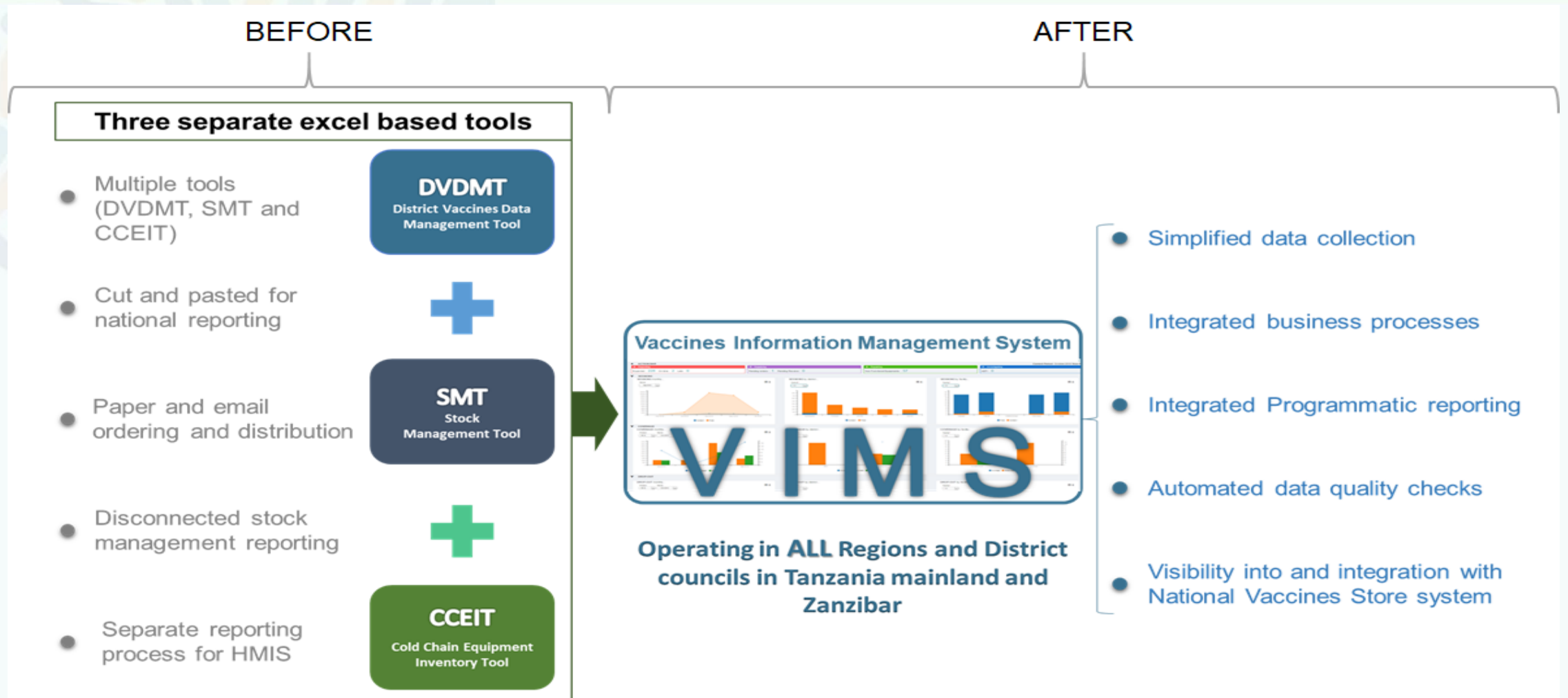
- **Importance of high-quality data:** planning, monitoring, evaluation, and identifying gaps
- Accountability, resource allocation, equity (who and why is missed)
- Timely detection of low coverage, vaccine wastage, cold chain issues, etc



The system is customizable based on activity, including tracking zero-dose children as well as VPD surveillance for facility notification

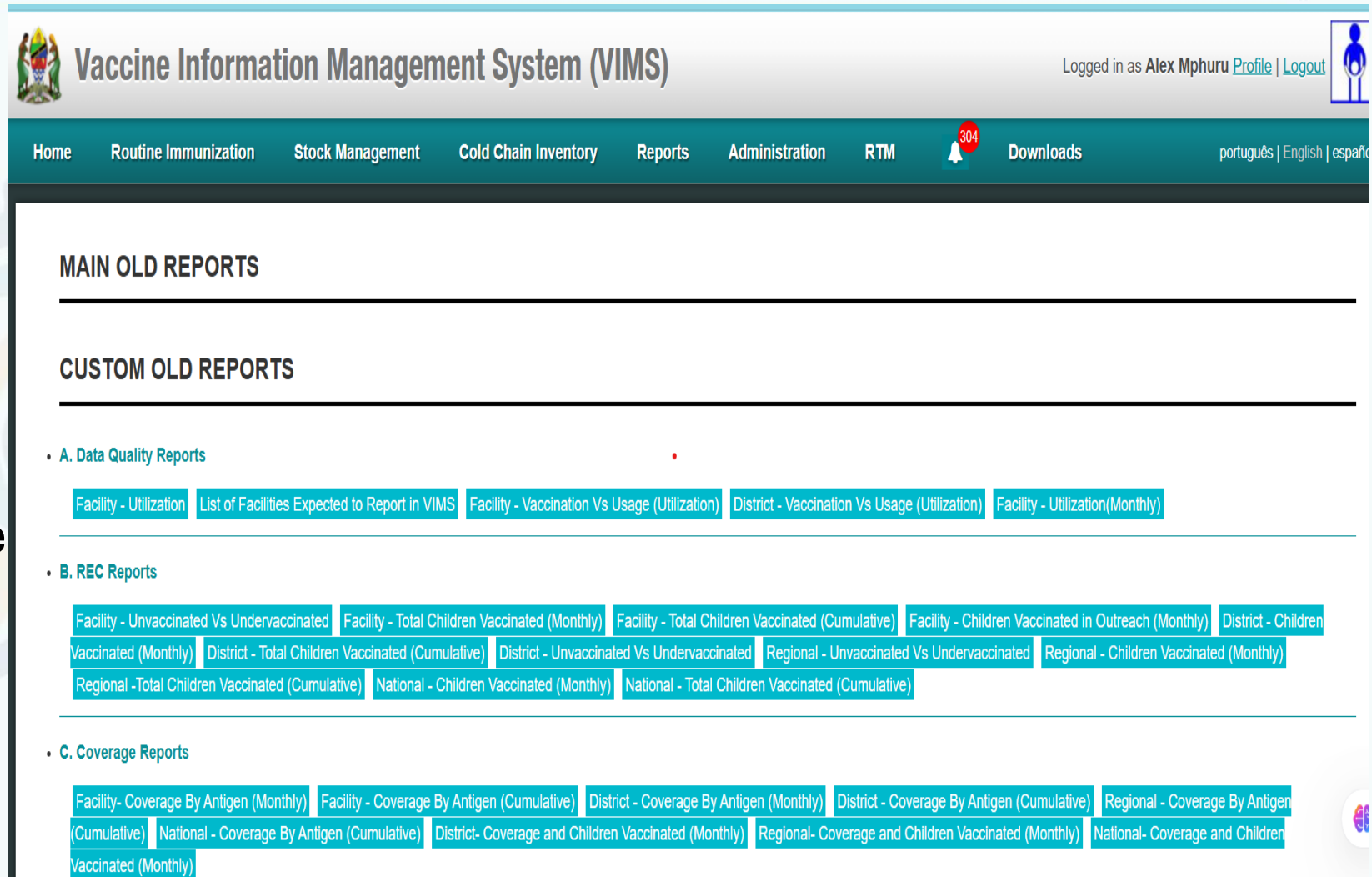


DATA MANAGEMENT TOOLS: VIMS



DATA MANAGEMENT TOOLS: VIMS

- Manage RI information
- Manage Stock information
- Manage Cold Chain Equipment Inventory
- Manage Remote Temperature Monitoring
- Warehouse Management System



The screenshot displays the VIMS web application interface. At the top, the header includes the Kenyan coat of arms, the title 'Vaccine Information Management System (VIMS)', and a user login status 'Logged in as Alex Mphuru' with links for 'Profile' and 'Logout'. A navigation menu below the header contains links for 'Home', 'Routine Immunization', 'Stock Management', 'Cold Chain Inventory', 'Reports', 'Administration', 'RTM', 'Downloads', and a notification bell icon showing '304'. The main content area is divided into sections: 'MAIN OLD REPORTS', 'CUSTOM OLD REPORTS', and three categories of reports: 'A. Data Quality Reports', 'B. REC Reports', and 'C. Coverage Reports'. Each category lists several report titles as clickable links.

Vaccine Information Management System (VIMS)

Logged in as Alex Mphuru [Profile](#) | [Logout](#)

[Home](#) [Routine Immunization](#) [Stock Management](#) [Cold Chain Inventory](#) [Reports](#) [Administration](#) [RTM](#) [Downloads](#) [português](#) | [English](#) | [español](#)

MAIN OLD REPORTS

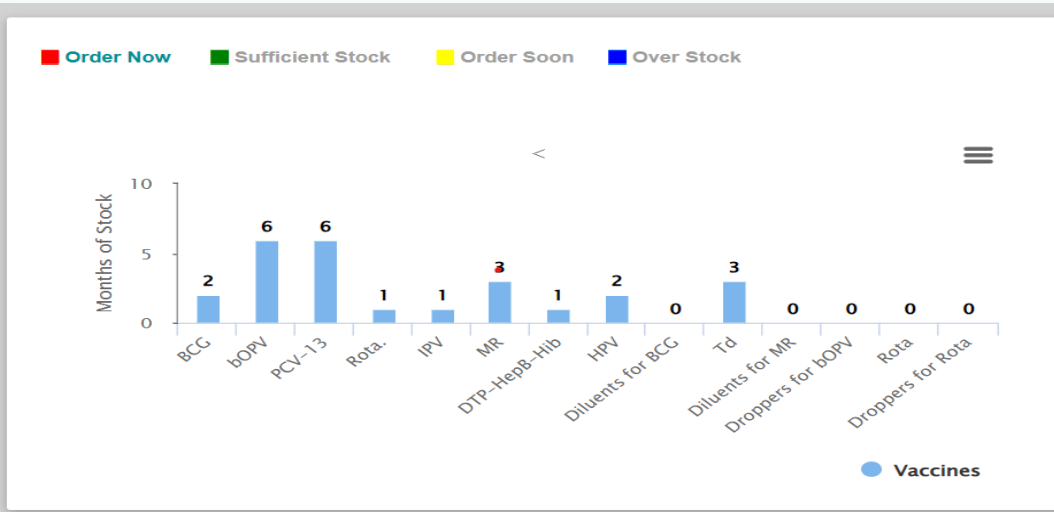
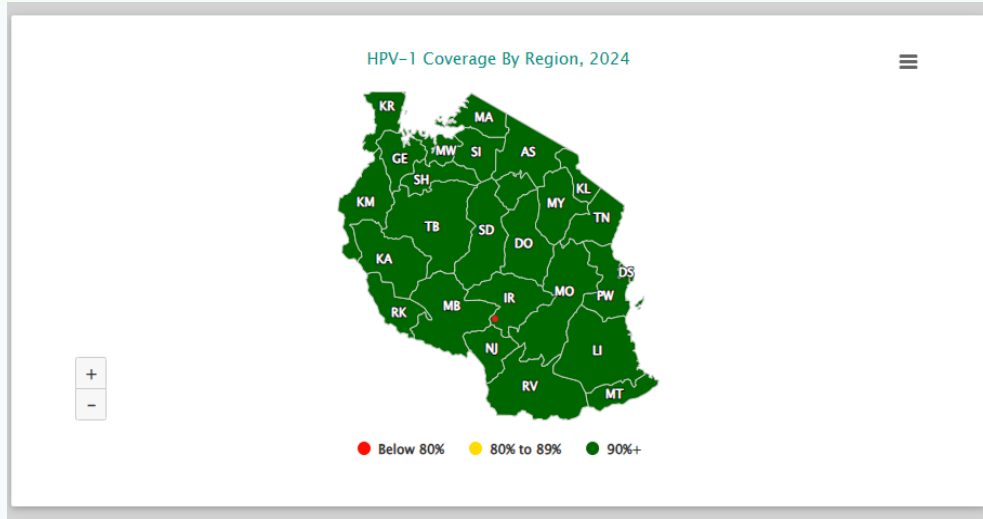
CUSTOM OLD REPORTS

- **A. Data Quality Reports**
 - [Facility - Utilization](#) [List of Facilities Expected to Report in VIMS](#) [Facility - Vaccination Vs Usage \(Utilization\)](#) [District - Vaccination Vs Usage \(Utilization\)](#) [Facility - Utilization\(Monthly\)](#)
- **B. REC Reports**
 - [Facility - Unvaccinated Vs Undervaccinated](#) [Facility - Total Children Vaccinated \(Monthly\)](#) [Facility - Total Children Vaccinated \(Cumulative\)](#) [Facility - Children Vaccinated in Outreach \(Monthly\)](#) [District - Children Vaccinated \(Monthly\)](#) [District - Total Children Vaccinated \(Cumulative\)](#) [District - Unvaccinated Vs Undervaccinated](#) [Regional - Unvaccinated Vs Undervaccinated](#) [Regional - Children Vaccinated \(Monthly\)](#) [Regional -Total Children Vaccinated \(Cumulative\)](#) [National - Children Vaccinated \(Monthly\)](#) [National - Total Children Vaccinated \(Cumulative\)](#)
- **C. Coverage Reports**
 - [Facility- Coverage By Antigen \(Monthly\)](#) [Facility - Coverage By Antigen \(Cumulative\)](#) [District - Coverage By Antigen \(Monthly\)](#) [District - Coverage By Antigen \(Cumulative\)](#) [Regional - Coverage By Antigen \(Cumulative\)](#) [National - Coverage By Antigen \(Cumulative\)](#) [District- Coverage and Children Vaccinated \(Monthly\)](#) [Regional- Coverage and Children Vaccinated \(Monthly\)](#) [National- Coverage and Children Vaccinated \(Monthly\)](#)

MONITORING AND EVALUATION: KEY INDICATORS



- Coverage: % girls receiving HPV vaccine, completing full schedule
- Timeliness of reporting (facility → district → national)
 - ✓ Data completeness & accuracy
 - ✓ Equity indicators: urban/rural, school attendance, socio-economic status
- Vaccine stockouts, cold chain performance



DATA MANAGEMENT (Key Issues)



Data Management

Strength:

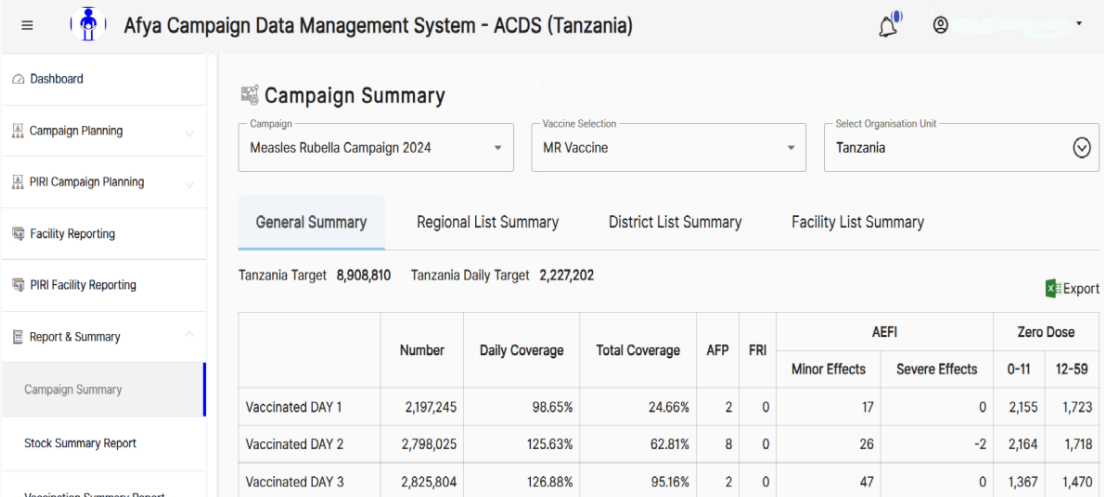
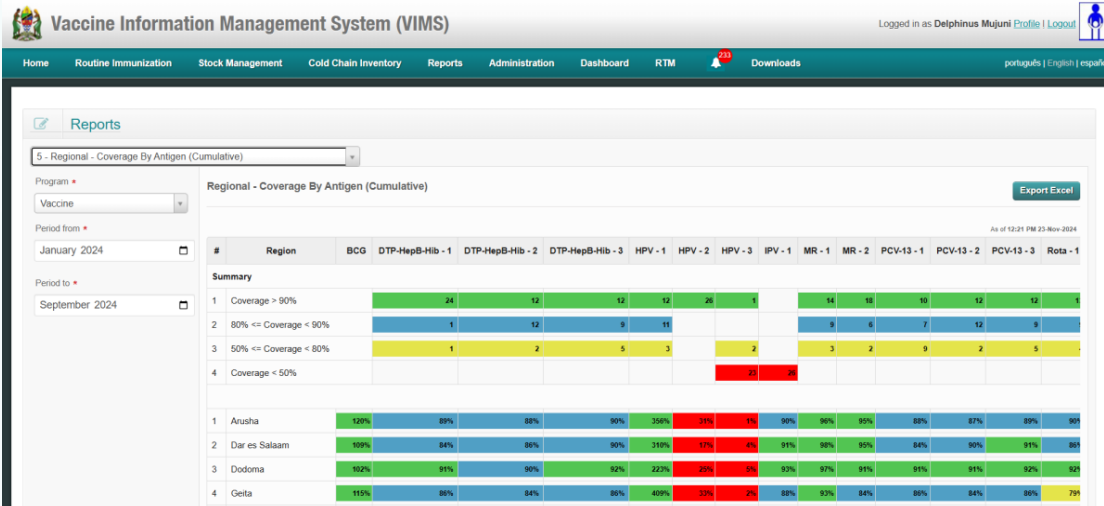
- High data completeness (98%) and timeliness (94.5%)
- Strong data quality review system at the National and District levels
- Availability of updated data recording and reporting tools
- Availability of a Vaccine Information Management System used at the National, Regional, and District levels

Weakness:

- Double Data Entry: Paper-based and Electronic records at lower
- Limited capacity for data analysis and use in decision-making
- Inadequate digital infrastructure and connectivity in remote areas
- Weak mechanisms for data quality assurance and validation

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DATA MANAGEMENT (Key Issues)



Data Management

Threat:

- Technology failures or poor internet connectivity disrupt reporting
- Dependence on external funding for digital tools and system upgrades
- Staff turnover leading to loss of data management skills

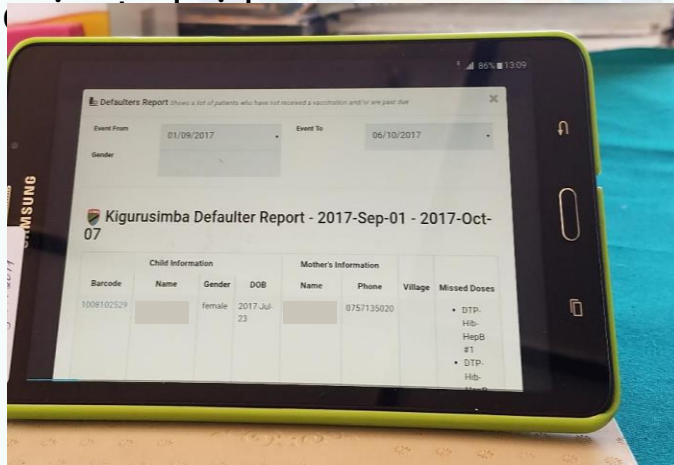
Opportunities:

- **Capacity building** on data management: on schedules and use of revised tools during roll-out of new HMIS to ensure consistent use of tools and integrated systems
- **Document catch-up experience** as a case study, which will bring together lessons learned and support the next steps to institutionalize, with emphasis on reporting and recording tools, including VIMS, DHIS2

DATA FOR ACTION: WHAT WORKED IN TANZANIA

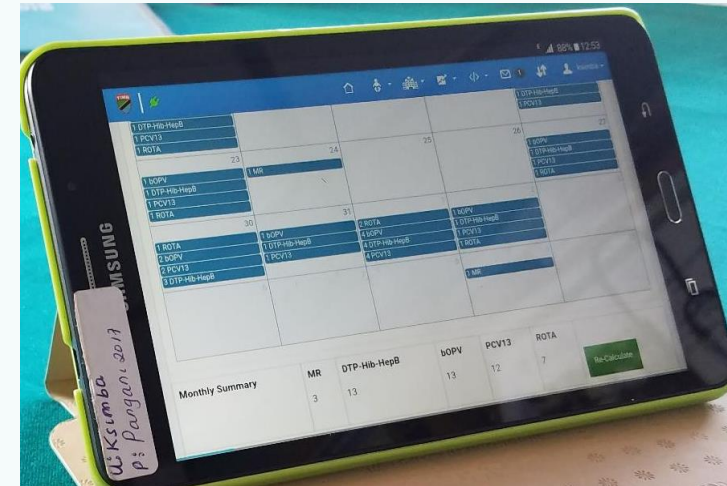


- Use of reporting & supportive supervision tools (AfyaSS or similar) to ensure facility compliance/data quality
- Engaging subnational & community stakeholders: teachers, community influencers included in evaluation of facilitators and barriers
- Multi-age cohort campaign as an example of a catch-up strategy guided by data on the magnitude of unvaccinated children



HCW can monitor program performance

- Able to identify defaulters
- Able to plan the immunization session
- Identify the schedule of each child, even from another catchment area
- Able to identify areas with low coverage



WHAT COULD BE IMPROVED



- Strengthen individual-level tracking (to follow girls across doses, follow-ups)
- Improve denominator estimation (accurate population of eligible girls, including those out of school)
- Ensure system interoperability so immunization-specific data links with facility, school, and community data
- Capacity building at the facility level: staff training, tools, resources, infrastructure
- Ensure data feedback loops: health workers and communities see and use data
- Plan for sustainable financing for data systems and maintenance



RECOMMENDATIONS FOR HPV VACCINATION



- Use mobile / digital tools for school based vaccination tracking, reminders, and community mobilization
- Use data to target interventions: councils or wards with low uptake, or with known barriers (e.g. out of school girls, remote regions)
- Shared monitoring & accountability frameworks: define metric(s) for timeliness, completeness, dose coverage, drop-outs
- Engage communities: ensure data capture includes community/ household level feedback so that local barriers are visible in the numbers

NEXT STEPS AND INNOVATIONS



- Explore the use of electronic immunization registries that can track individual girls
- Leverage mHealth (SMS/apps) for reminders, defaulter tracing
- Strengthen logistics & supply chain data: cold chain monitoring, vaccine stock tracking
- Partner with schools and community organizations for data gathering and outreach
- Use geospatial data & mapping: identify “hotspot” areas of low coverage

- Develop decision support tools for health workers
- Further integration with other HIS
- Routine system improvement for ongoing changes
- Focus on workforce development to bridge the digital skills gap (digital divide)
- Expand ICT infrastructure and asset management to underserved areas

CONCLUSION



- Strong HIS are central to effective HPV immunization programs
- Tanzania has made meaningful progress, but gaps remain
- Data-driven strategies (costing, targeting, monitoring) show promise
- With improved tracking, infrastructure, community involvement, and policy support, significant gains are possible in coverage, equity, and cost-efficiency

CALL FOR ACTION



- Collaborate across government, NGOs, and communities for data sharing & harmonization
- Advocate for investment in digital health & HIS capacity
- Support operational research/implementation science to learn what works in different contexts
- Share best practices and tools across countries/regions
- Hold regular review forums where data are shared and action plans set





Thank you



CHIC

COALITION to STRENGTHEN the
HPV IMMUNIZATION COMMUNITY

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