



JSI RESEARCH & TRAINING INSTITUTE, INC.



HOW BETTER DATA VISIBILITY CAN KEEP YOUR VACCINES SAFE

10th Conference on Health and Humanitarian Logistics
July 18-19, 2018

Presenter: Nassor Mohamed

Additional Authors: Alex Mbyalu, Ngwegwe Christopher Bulula, Wendy Prosser,
Shahrazad Yavari, Caroline Kania

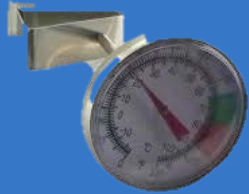


Cold chain is essential for vaccines

Photo by Ian J. Connors

- WHO standards require vaccines to be kept between 2° and 8° Celsius (35.6 ° - 46 ° F)
- Ensures vaccine safety and preserves potency
- Difficult to accurately monitor temperatures throughout the immunization supply chain

Temperature monitoring for vaccine cold chains continue to advance



First generation: Stem Thermometers

- Difficult to maintain accuracy
- Require manual readings twice a day
- No insight between readings/after work hours/weekend
- No longer recommended by WHO



Second generation: 30 Day Temperature Reporting (30DTR)

- Provide more reliable reporting
- Track for 30 days
- Still requires opening the cold chain equipment twice daily for temperature readings

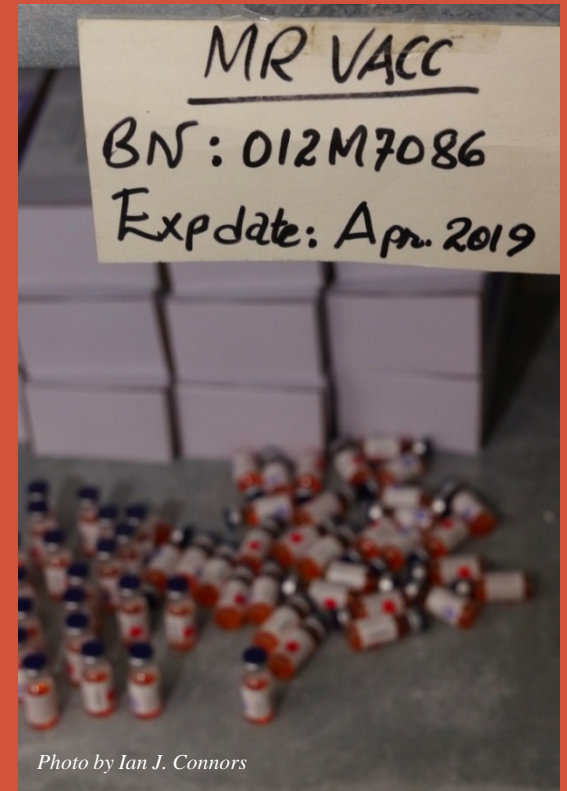


Today's technology: Remote Temperature Monitoring Devices (RTM)

- Sends SMS alerts for immediate action for temp excursions
- Sends real-time data to dashboard for on-going supervision
- Provides data visibility for higher level decision makers

COUNTRY EXPERIENCE WITH REMOTE TEMPERATURE MONITORING (RTM) DEVICES

Tanzania



Protecting Vaccines: The RTM System

The RTM System has 3 Core Components:

RTM Device



- The ColdTrace sensor device sends **alerts via SMS (text message) and email** when fridge temperatures get **too hot** or **too cold**

Data Analytics Dashboard



- Secure, cloud-based dashboard that allows remote access to **real-time temperature data**
- **Integrates into** existing LMIS systems (VIMs)
- Provides **customizable analytics** and **report-generating tools** to track equipment performance

Standard Operating Procedures (SOPs)



- SOPs for nurses, maintenance technicians, regional supervisors, and ministries of health for **effective cold chain system management**

Overview: RTM in Tanzania

- JSI, Nexleaf, and the Ministry of Health, Community Development, Gender, Elderly and Children (MOHC DGEC), through the Immunization and Vaccine Development (IVD), with a focus on government ownership and sustainability
- 120 devices installed at end of 2017 in health facilities (including 6 district stores)
- Plans for expansion of RTM in up to 5,000 more sites through different projects and partnerships

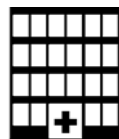


Activity

- Prep included collectively revising SOPs and developing installation app with MOH and partners, training installation teams, and contracting network providers
- District government provided installation teams, transport and supervision for installation for sustainability
- On-going monitoring and trouble shooting provided by district immunization officers and JSI
- Dashboard reviewed at district, regional, and national level
- Reviewed by Logistics Technical Working Group regularly
- Evidence of data driving decisions



Strengthening Cold Chain Management through Effective Information Flow



NATIONAL MOH

- National Procurement and Maintenance Strategy



DISTRICT/PROVINCE MOH

- Maintenance Planning and Information Flow



TECHNICIAN

- Remote Fridge Repairs and Informed Facility Visits

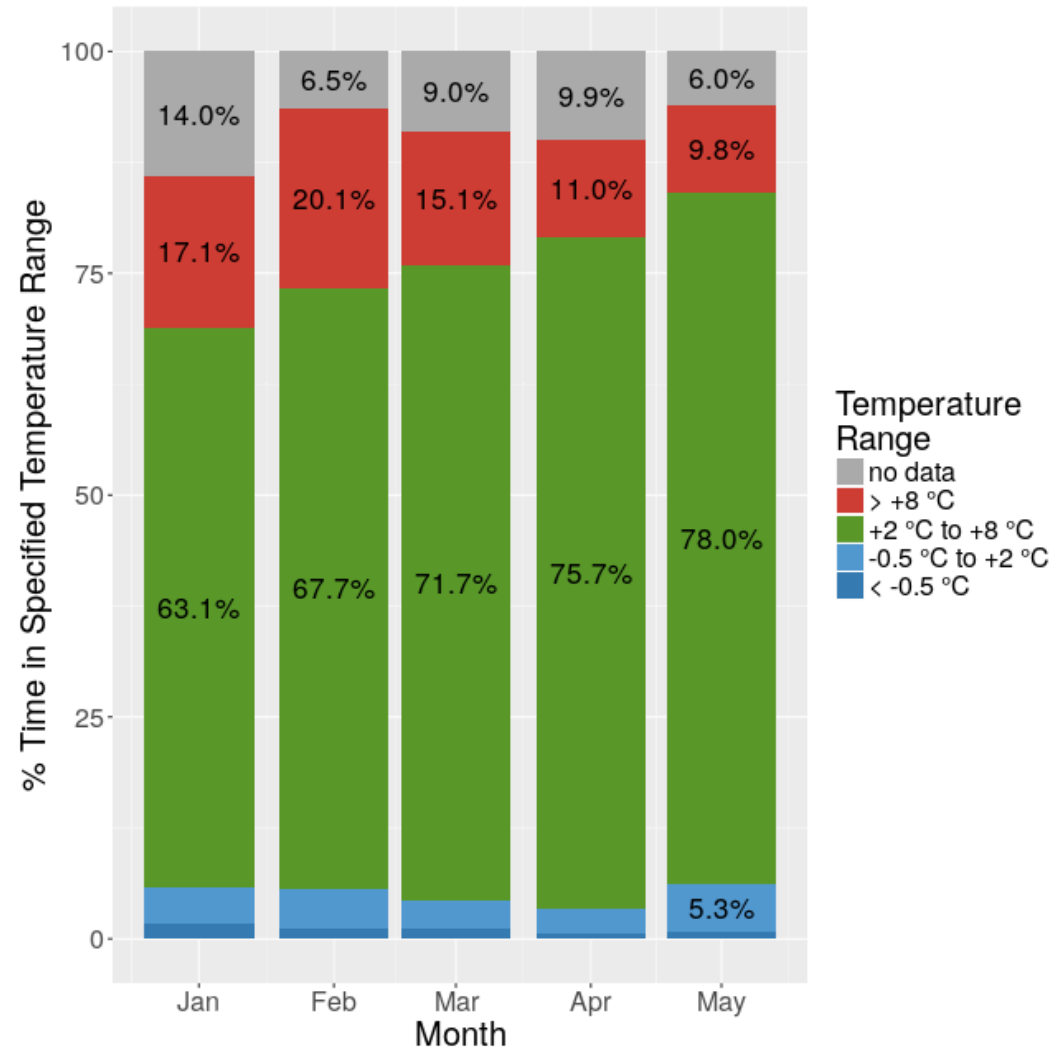


FACILITY STAFF

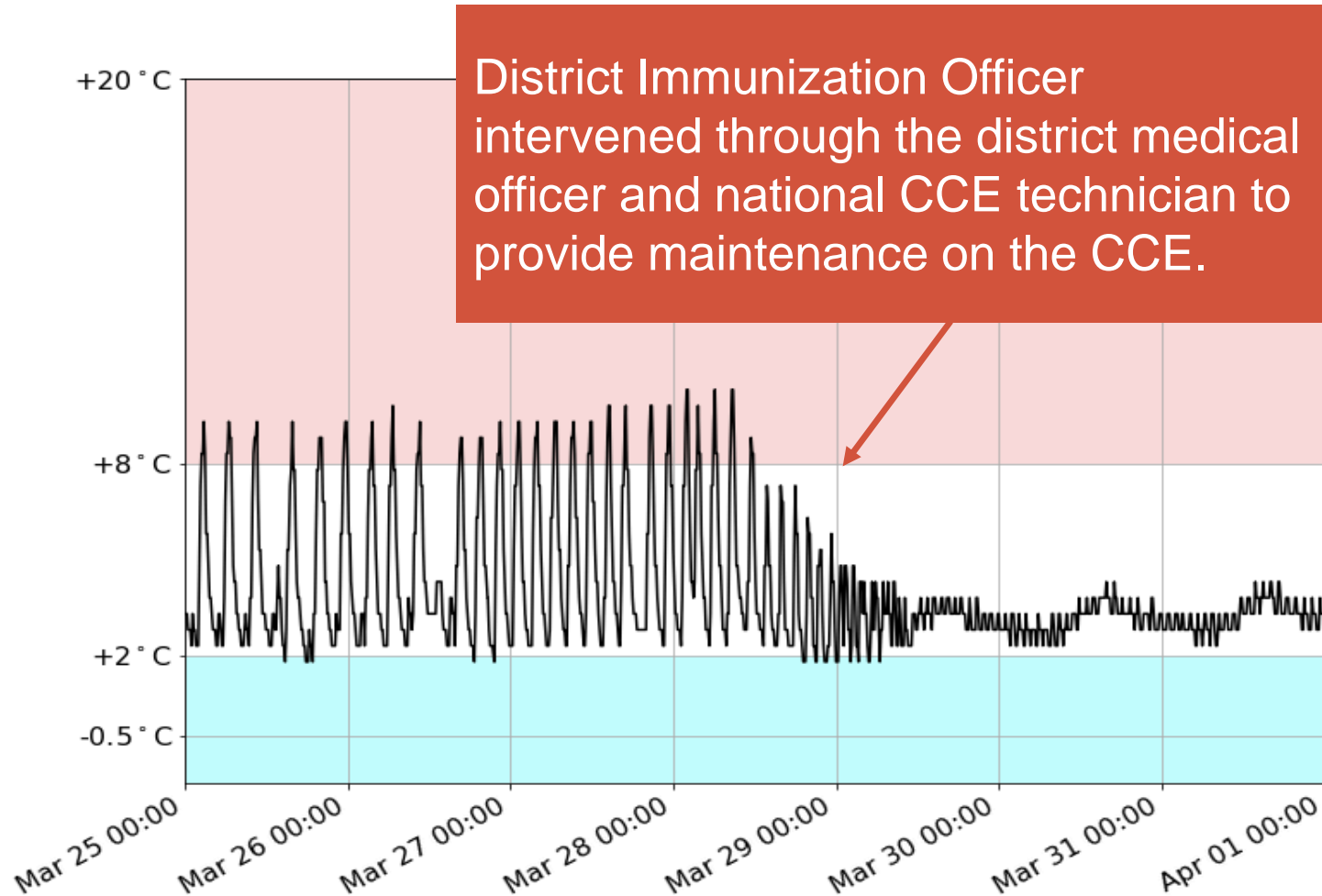
- Temperature Alarms and Preventive Care

Data Driven Actions in Tanzania

- Fridge uptime improved since installation of RTM
- Data visibility led to increased awareness of cold chain equipment problems, which led to directed solutions:
 - National level CCE technicians
 - Thermostat adjustments
 - CCE cleaning/defrost

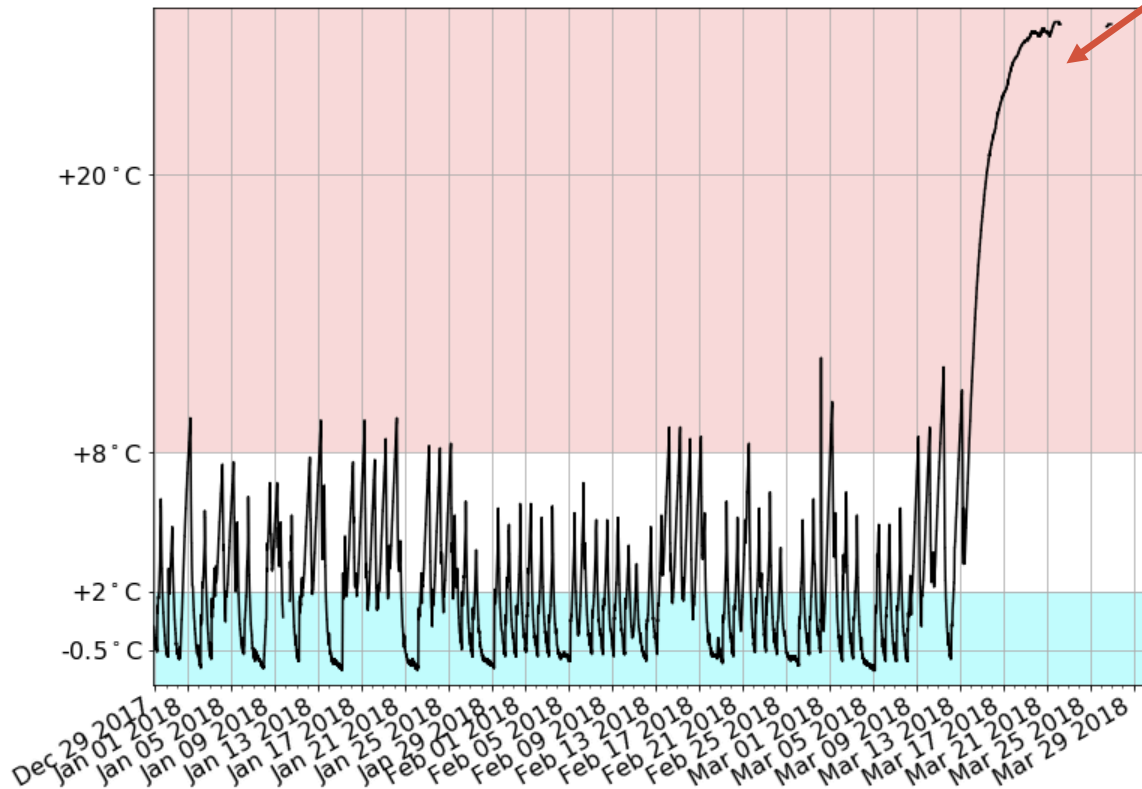


Example of Data Driven Action



CCE device correction driven by RTM data

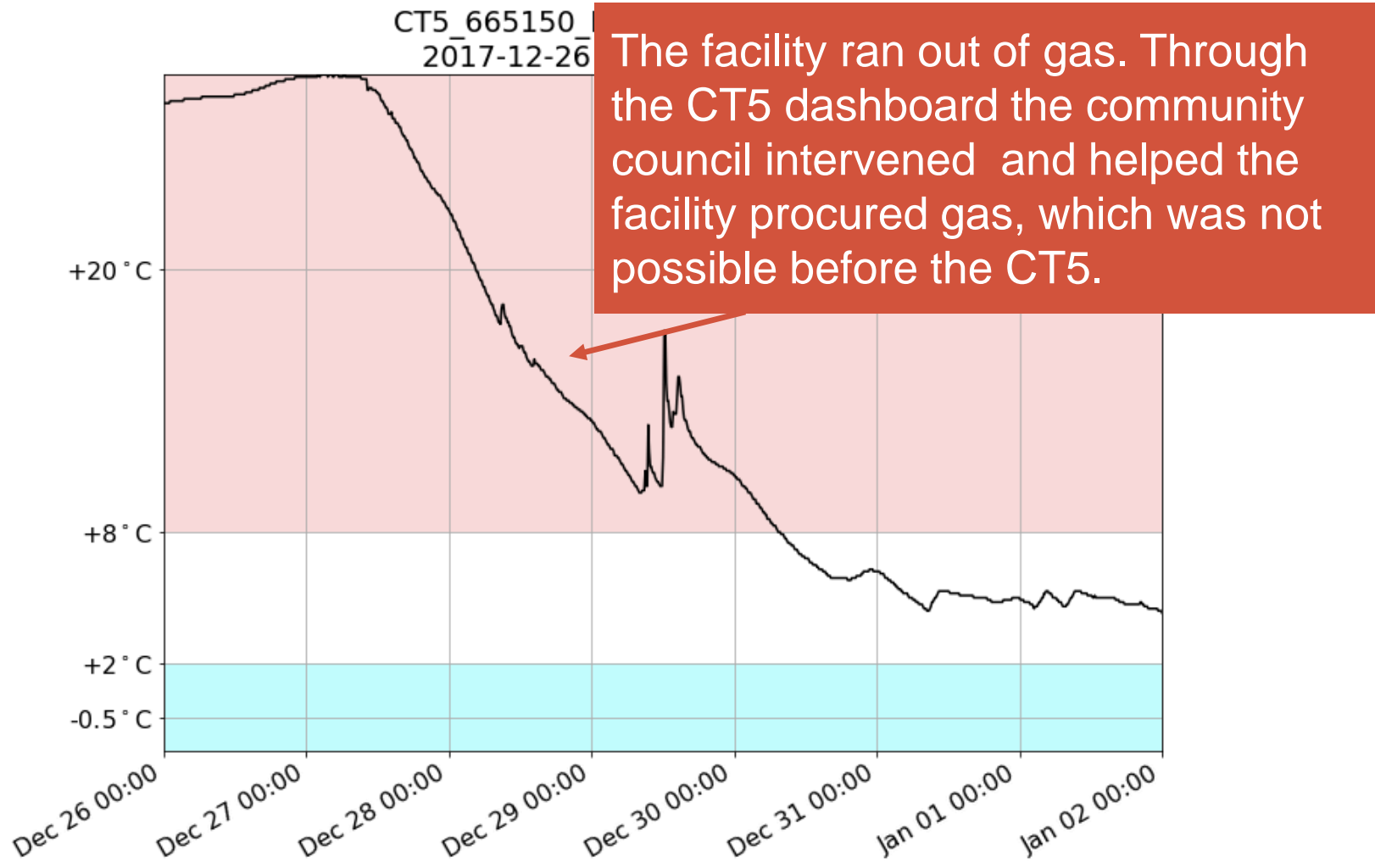
Example of Data Driven Action



It was difficult to identify this type of performance for the CCE before CT5. Technicians were unable to repair this CCE. The facility is temporarily using a CCE at a near by facility while waiting for another CCE

CCE device stopped to be used, driven by RTM data

Example of Data Driven Action



Ensuring availability of LPG to run the CCE driven by RTM data

Higher level decisions

In one region, when the district immunization officer noticed wildly fluctuating temperatures in the CCE on the RTM dashboard due to electricity cuts. He brought this to the attention of the District Medical Officer, who mandated that all facilities have back-up LPG cylinders available for the CCE when there are problems with electricity. This seemingly small change in process has improved the safety of vaccines.



Key lessons learned

- Improving the visibility of CCE problems can alert higher level supervisors, validate reports from healthcare workers, and drive action
- SMS alerts can drive immediate responses to temperature excursion; data on the dashboard contributes to longer-term planning from monitoring cold chain equipment
- Data visibility alone cannot drive action; must be within a system for data review and data use
- Need a strong cold chain equipment maintenance system in place to be able to respond to now-visible cold chain issues

RTM Data Connects Health Workers

Personnel at every level are working together and using data to strengthen the cold chain.



RTM Data Improves Cold Chain Management

- RTM is increasing accountability for CCE maintenance at all levels of the system.
- Upon seeing the dashboard for the first time, the MoH focal person for immunization insisted that District managers respond more quickly to CCE failures.
- This added level of oversight through data visibility has placed emphasis on the importance of working together to address cold chain failures in a timely manner.

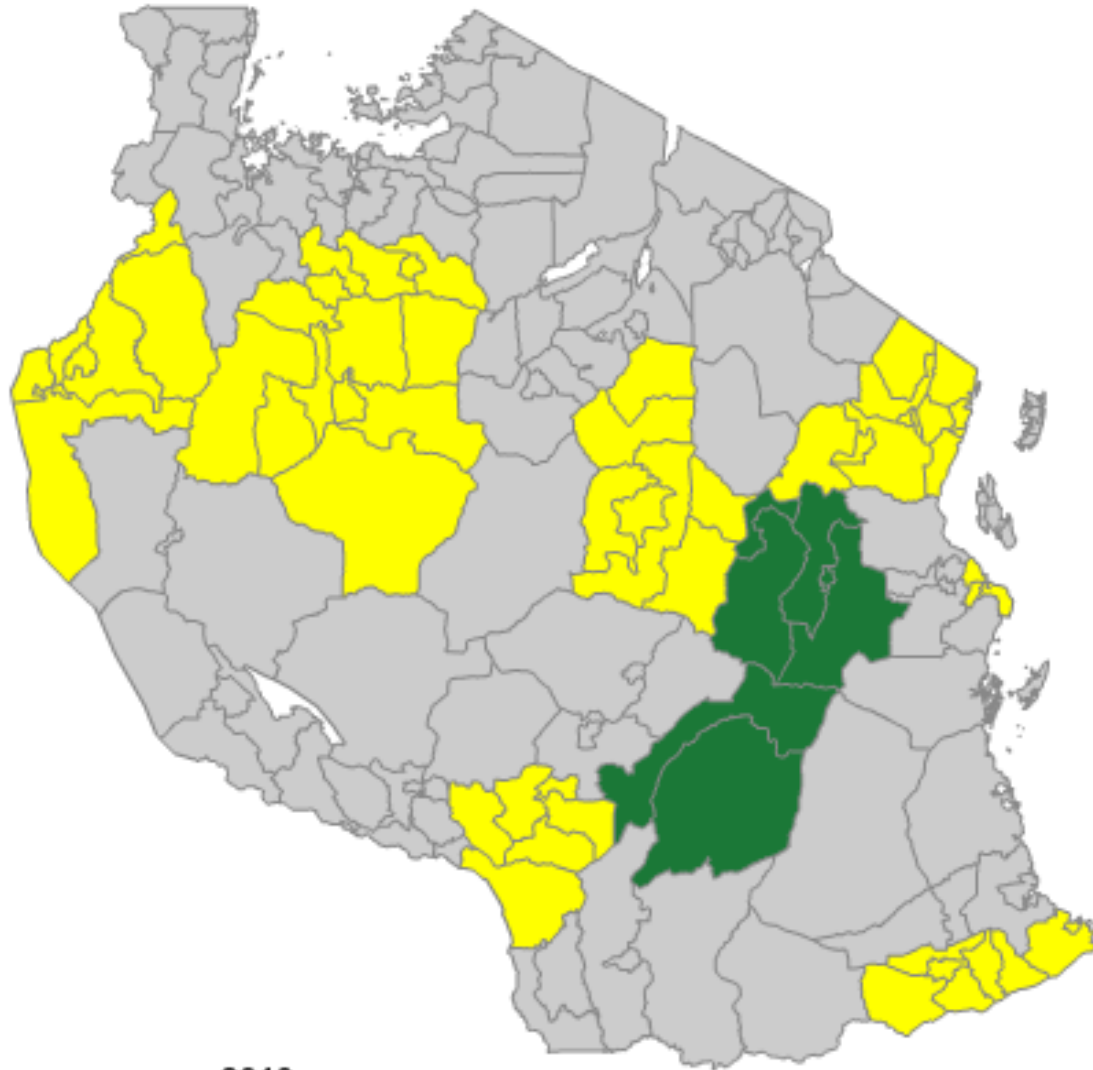


Abdul Kakai , Regional Immunization and Vaccine Officer (RIVO), Morogoro Region, monitors the RTM dashboard.

Next steps for cold chain strengthening in Tanzania

- IVD in Tanzania has already committed to scaling up RTM across the country with government ownership and leadership
- Continue to strengthen the data review process with all levels to promote a data use culture
- Continue to work through the details of a transition and sustainability plan for government ownership, and for long-term planning for cold chain equipment needs

RTM COVERAGE



 Covered

 Will be covered in Phase II

 Will be covered in Phase III

ASANTE SANA

