Global Health
Supply Chain Summit

ABSTRACT 32
TRACK 2
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2024

VALUE CHAIN INNOVATIONS FOR UNIVERSAL HEALTH COVERAGE

Supporting regular immunization and emergency efforts through cold chain strengthening in Eswatini, Mozambique, Kenya, Tanzania, Malawi, and Zambia

Global Health Supply Chain Conference 2024

Global Health
Supply Chain Summit

The Coca-Cola system maintains one of the largest cold chain asset bases in the world, with average uptime at 99%+.

"If it's not cold, it's not sold."

Unlocking private sector best practices to strengthen health systems across Africa

Project Last Mile is a **leading public-private partnership for health**, translating supply chain and marketing innovations and best practices from the Coca-Cola ecosystem to strengthen public health systems down to the last mile.

Demonstrated partnership

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USAID FROM THE AMERICAN PEOPLE

THE GLOBAL FUND

BILL & MELINDA GATES foundation

THE Coca-Cola COMPANY

THE Coca-Cola FOUNDATION

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LIVES REACHED

17
COUNTRIES

14
YEARS

59
PROJECTS

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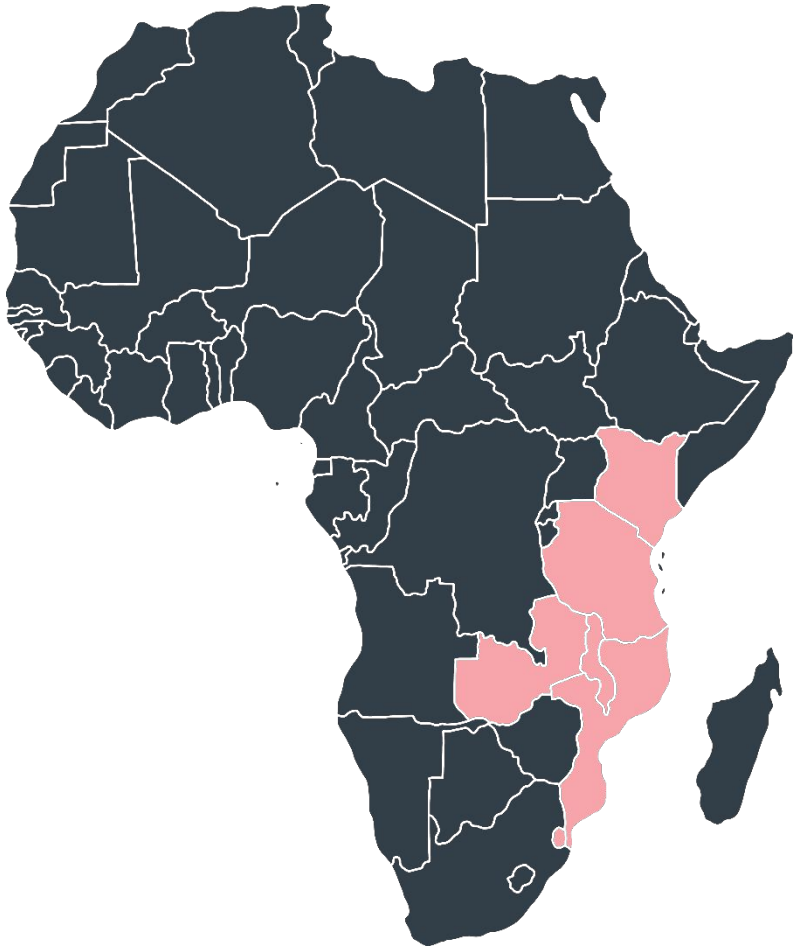
Global Health Supply Chain Summit

Cold chain strengthening

Project Last Mile's Technical Assistance includes utilizing **The Coca-Cola Systems' expertise and networks**—including its existing equipment manufacturer and service provider network—to improve cold chain storage and distribution systems that maintain temperature-sensitive vaccines and medical commodities at the right temperature.

Supported six African countries in improving the uptime of existing cold chain equipment during COVID-19: Eswatini, Mozambique, Kenya, Tanzania, Malawi, and Zambia



Emergency response: Focus on rapid increase in cold chain storage capacity for COVID-19 vaccines.

Development of collaboration platforms and processes between global partners and local health agencies for COVID-19 vaccine distribution.

Identifying risks and implementing mitigation solutions for cold chain breaches.

Strategic planning for emergency ultra-cold chain deployment.

Developing and implementing repair and maintenance programs for improving cold chain storage capacity, availability and reliability.

Evolving from emergency response to long-term visibility

Shift to long-term sustainable system resilience through human capacity building and system management strategy development.

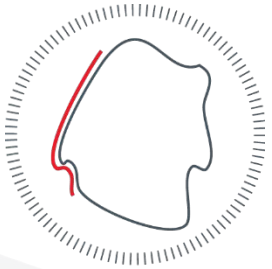
Improving knowledge and visibility of cold chain equipment infrastructure and needs through assessments and communication channels.

Building capacity for cold chain equipment management by collaborating with ministries of health to strengthen management processes and practices and training personnel for preventative maintenance.

Delivering analysis and strategic recommendations for cold chain equipment management, gaining buy-in, and demonstrating the effectiveness of recommendations through direct implementation in the health facilities and on-the-job collaboration with Ministry of Health cold chain teams.

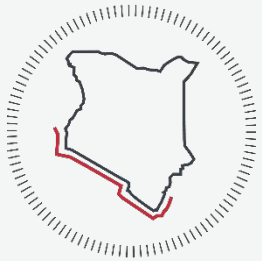
Results

Project Last Mile played a key role in planning for COVID-19 vaccine rollout in four countries

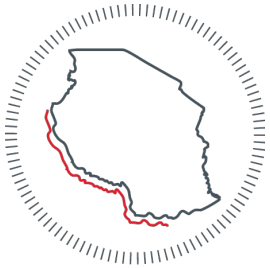


Eswatini

Mozambique



Kenya



Tanzania

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Results

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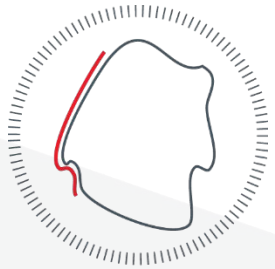


Eswatini:

Developed collaboration processes and established partnerships for implementing national vaccine distribution and cold chain strengthening programs.

Results

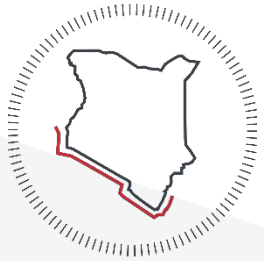
Project Last Mile played a key role in planning for COVID-19 vaccine rollout in four countries

Mozambique:

In collaboration with the Ministry of Health, Project Last Mile visited 40% of the country's health facilities to repair and upgrade cold chain equipment and ensure readiness ahead of the delivery of 10 million vaccine doses.

Results

Project Last Mile played a key role in planning for COVID-19 vaccine rollout in four countries

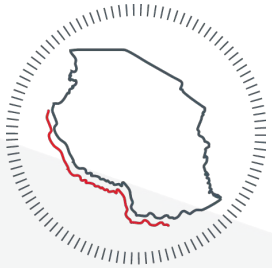


Kenya:

In collaboration with the Ministry of Health and AMREF, Project Last Mile implemented a localized technical assistance program for cold chain readiness in Kasarani Sub-county Health Facilities ahead of vaccine delivery.

Results

Project Last Mile played a key role in planning for COVID-19 vaccine rollout in four countries



Tanzania:

Implemented a cold chain strengthening program, developed last mile delivery plans, and identified equipment and resource needs for vaccine distribution to 150 health facilities nationwide.

Repair and maintenance results

From 2021, Project Last Mile delivered extensive cold chain equipment repair and maintenance services in six country programs by subcontracting to The Coca-Cola System approved third-party providers.

2,986 cold chain equipment repaired and/or maintained.

Installed 14 ultra-cold chain equipment and repaired 4.

Average 18% increase in vaccine storage capacity.

Installation, replacement, or repair of critical auxiliary equipment, including:

- 485 temperature monitors
- 140 voltage regulators
- 60 solar panels
- 55 solar batteries
- 30 power stabilizers
- 16 generators
- 86 vaccine carriers
- 22 cold boxes
- 12 lightning protection kits

Capacity building results

From 2021, Project Last Mile delivered training to Ministry of Health cold chain equipment technicians and health facility workers for conducting preventive maintenance, basic cold chain equipment repair, and advanced cold chain equipment repair and maintenance for qualified technicians.

Trained 1,648 health workers in cold chain equipment repair/ preventive maintenance:

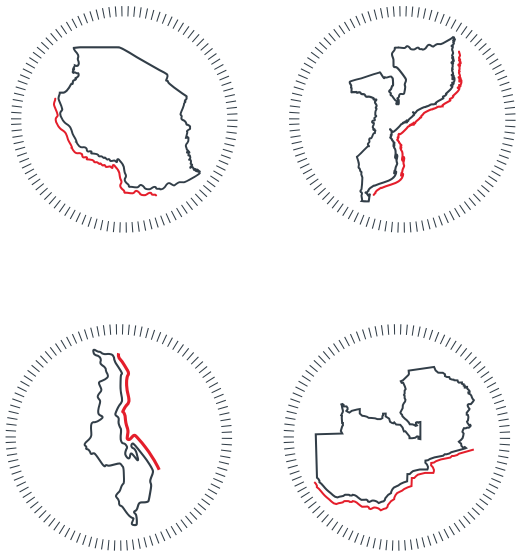
- Eswatini = 137
- Kenya = 30
- Mozambique = 143
- Malawi = 676
- Zambia = 662 (including 25 advanced technicians)

Measurable improvement in cold chain equipment knowledge and maintenance capability.

Project Last Mile tested training participants' knowledge in the following areas: general refrigerator management; key daily, weekly, and monthly maintenance activities; refrigerator models, power sources, and capacity; temperature and run-time requirements; facility assessment criteria.

Visibility results results

Cold chain equipment database development: These assessments evolved into a comprehensive database for systemic visibility and tracking of cold chain equipment.



Country-specific insights: Tanzania, Mozambique, Malawi, Zambia:

- Reviewed cold chain equipment status and delivered preventative maintenance across 1,522 health facilities.
- Guided immediate repair and maintenance efforts.
- Highlighted key issues:
  - Infrastructure improvements (generators, solar panels, batteries, voltage regulators, electrical cables, etc.)
  - Up-to-date temperature recordings.
  - Maintenance routines.

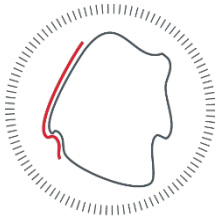
Strategic recommendations: Mozambique, Malawi, Zambia:

- Assessment database delivered to the Ministry of Health.
- Became a cornerstone for strategic recommendations on long-term cold chain equipment management.

Strategic system strengthening results

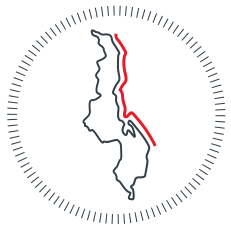
Strategic recommendations for systemic improvement of cold chain equipment management

Country-specific strategic recommendations:



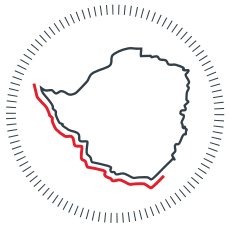
Eswatini:

- Conducted cost analysis showing preventative maintenance decreases overall cold chain equipment expenditure.
- Recommendations centered on developing maintenance capabilities and adopting regular preventative maintenance practices from The Coca-Cola System.



Malawi:

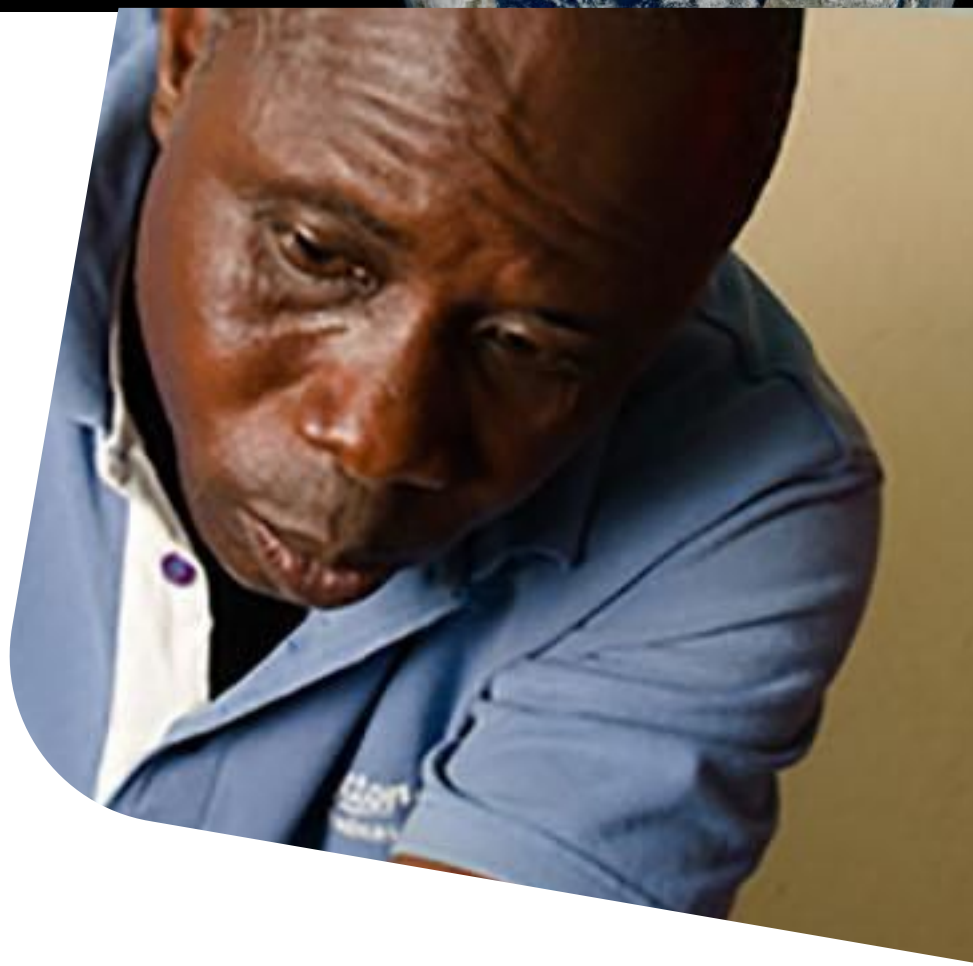
- Engaged stakeholders to bridge gaps between service agencies.
- Built consensus on implementing recommendations and securing Cold Chain Equipment service budget funding.
- Promoted sustainability through the integration of cold chain equipment maintenance programs into technical education in Lilongwe and Blantyre.



Zambia:

- Strong engagement with Ministry of Health and cold chain equipment agencies.
- Gained buy-in for strategic proposals to improve cold chain equipment management structures.
- Noted the need for additional resources for full implementation.

Key learnings



- **Strategic planning and COVID-19 vaccine execution**
- **Repair and maintenance**
- **Capacity building**
- **Knowledge and visibility**
- **Improving cold chain equipment management**

Key learnings

Strategic planning and COVID-19 vaccine execution

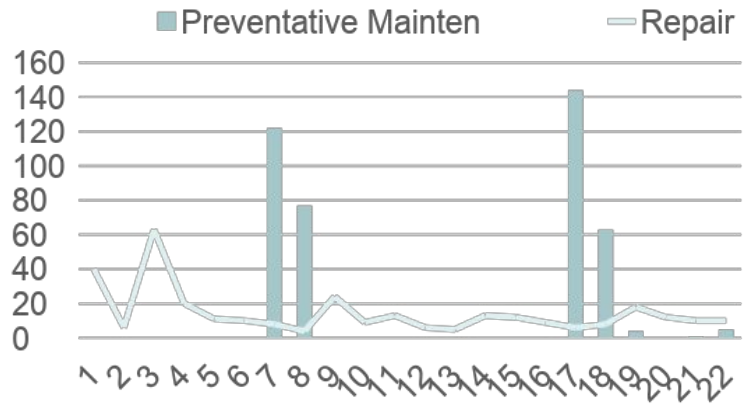
- **Cross-functional coordination:**
  - Critical for successful emergency response and rapid vaccine deployment.
  - Project Last Mile's stakeholder coordination in Eswatini is a potential blueprint for future emergencies involving cold chain systems.

Key learnings

Repair and maintenance

Preventative maintenance:

- Key to increasing cold chain equipment reliability and longevity while reducing the total cold chain operation and maintenance cost.
- Can be delivered routinely by Ministry of Health technical service teams and health facility staff with basic training and checklists.
- Technical maintenance service visits periodically by expert technicians.
- Third-party providers are only needed for comprehensive cold chain equipment repair works that cannot be handled by Ministry of Health technicians.



Drop in the average no. of repairs per month before and post preventative maintenance

Key learnings

Capacity building

- **Human resources and training:**
  - Adequate human resources are available for cold chain equipment maintenance and repair.
  - Training health facility workers and service technicians on preventive maintenance improves ownership and equipment reliability and reduces long-term repair needs and relevant costs.
  - Advanced skills and motivation for technicians improve system uptime.
  - Resource limitations include maintenance tools, transportation, spare parts, and infrastructural improvement needs.

Key learnings

Knowledge and visibility

Cold chain equipment assessment and database:

- Essential for understanding challenges, planning, and executing repair and maintenance.
- Long-term reliability and resilience require real-time database maintenance.
- Lack of baseline historical data impacted Project Last Mile's performance tracking.
- An up-to-date cold chain equipment operation and maintenance database would be a powerful tool when combined with real-time remote temperature monitoring capability.

Key learnings

Improving cold chain equipment management

- **System coordination:**
  - Wide range of actors with varying information.
  - Improved visibility and communication support system effectiveness.
- **Annual planning and resource/capability allocation for improved cold chain management, including;**
  - Regular preventive maintenance programs
  - Regularly updated cold chain equipment operational database
  - Resources and budget for preventive and corrective maintenance management
  - Ministry of Health ownership, standard operating procedures, and reporting/approval structure for third-party installations and repair/maintenance services.

Recommendations for strengthening cold chain equipment management

- **Strategic coordination**
- **Preventative maintenance**
- **Capacity building**
- **Knowledge and visibility**
- **Transfer of private sector knowledge and best practice**

Recommendations for strengthening cold chain equipment management

Strategic coordination

- **National and global stakeholders:**
  - Implement cross-functional coordination modelled after Project Last Mile's work in Eswatini.

The strategic coordination program should include the following elements:

- Strategic and operational planning for vaccine distribution to ensure all stakeholders have defined roles and responsibilities.
- Assessment, repair, and upgrade of cold chain and ultra-cold chain distribution and storage infrastructure.
- Ensuring sufficient management and workforce capacity with necessary training.
- Timely communication and collaboration between relevant departments and partners.
- Development of a reporting format to track progresses, urgent issues and key performance indicators of the vaccination program.

Recommendations for strengthening cold chain equipment management

Preventative maintenance

- **Site-level and technical maintenance:**
  - Routine daily and weekly cold chain equipment cleaning, inspection and basic maintenance by trained health facility staff.
  - Routine site-level preventative maintenance by trained Ministry of Health technical service teams.
  - Sustainable local technical service availability for comprehensive repair works and cold chain equipment installations. These third-party services should be managed and approved by Ministry of Health management after each service visit.

Recommendations for strengthening cold chain equipment management

Capacity building

- **Training and supervisory systems:**
  - Train health facility workers in basic preventative maintenance.
  - Implement capability development programs and ensure continuous knowledge and skill development and motivation of cold chain equipment service technicians.
  - Equip service technicians with repair and maintenance tools and address resource limitations for repair work and infrastructure needs.

Recommendations for strengthening cold chain equipment management

Knowledge and visibility

- **Real-time maintenance database:**
  - Maintain cold chain equipment databases in real-time for accurate performance tracking.
  - Where possible, combine the maintenance database with a real-time remote temperature monitoring database to maximize the benefits of both capabilities.

Recommendations for strengthening cold chain equipment management

Transfer of private sector knowledge and best practice

- **Adopt best practices:**
  - Utilize databases, KPIs, and centralized management approaches.
  - Define clear roles and responsibilities within service organizations.
  - Implement digital tools for maintenance tracking and workforce management.
  - Use operational analytics and routine reporting for continuous improvement.

Questions?

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