

FROM PLAN TO IMPLEMENTATION: Lessons Learned from Niger's Introduction of New Cold Chain Technology

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PROJECT SUMMARY

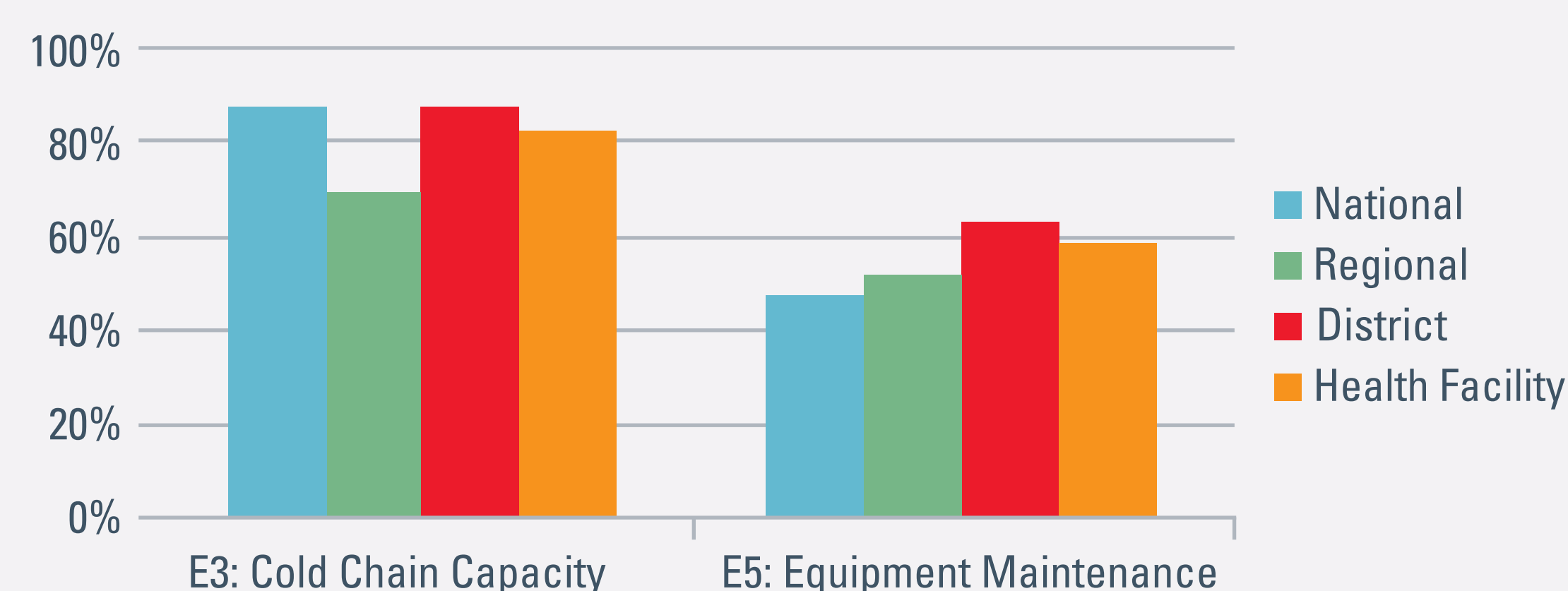
- Niger has prioritized updating its cold chain equipment in order to strengthen the vaccine program, increase vaccine availability and coverage rates.
- Cold chain equipment procurement is supported by Gavi, the Vaccine Alliance, through a Health Systems Strengthening (HSS) grant and the Cold Chain Equipment Optimization Platform (CCEOP).
- More than 1,200 refrigerators will be procured and installed over the next five years.

This poster documents the planning process through installation and monitoring in order to provide lessons learned and guidance for other countries undertaking these activities.

BACKGROUND AND PROBLEM STATEMENT

- Country priority:** As stated in the comprehensive Multi-Year Plan (cMYP), to ensure more equitable access to vaccines for people in all communities. This requires a reliable cold chain from the point of entry through health facilities and to outreach sites to ensure vaccine potency.
- EVM Assessment:** Using the results of the Effective Vaccine Management (EVM) Assessment in 2014, the two criteria related directly to cold chain indicated sufficient cold chain capacity with the current vaccine schedule but would be constrained with the planned new vaccines (Criteria E3), and inadequate equipment maintenance practices at all level of the system (Criteria E5).

EVM RESULTS, 2014



- Updated cold chain inventory:** As part of developing a Continuous Improvement Plan, the country updated the inventory and discovered additional gaps in cold chain equipment:

- 90% of inventory was either non-functional or underperforming.
- 73% of health facilities used gas-powered equipment, dependent on an unreliable energy source.



An obsolete and no longer recommended gas-powered refrigerator. These will all be replaced over the next few years.

SOLUTION

Planning

- Stakeholders used the Cold Chain Inventory and Gap Analysis tool to identify capacity needs, including planned vaccine introductions in the coming years.
- This analysis contributed to a strategic plan with long-term sustainability.
- Identified a need of more than 1,500 solar fridges with the goal of having solar equipment available at all health facilities to mitigate the challenges due to unreliable electricity.
- The country submitted an application for CCEOP for the remaining cold chain equipment needed for the improvement plan.

Phased Implementation

- During 2015 and 2016, with support from Gavi HSS funds, the country procured 354 cold chain equipment, through UNICEF, 96% of which are solar direct drive. This will reduce the dependency on gas or battery-operated solar equipment.
- The MOH with UNICEF and JSI support developed a detailed micro-plan for installation.
- UNICEF/Supply Division trained Ministry of Health service technicians; through cascade training, the installation teams were able to effectively install all equipment with minimum problems.
- A temperature monitoring study in 2016 confirmed continued high performance of the cold chain equipment.
- Close monitoring of installation and on-going maintenance have contributed to lessons learned as the country prepares to procure and install four times as many refrigerators over the next few years.

COUNTRY PROFILE

- Population:** 19.9 million (2015 estimates, World Bank)
- Land mass:** 1.267 million square miles, Western Africa
- Largely agrarian and subsistence-based economy
- Majority of the population is located in the southernmost extreme of the country along the border with Nigeria and Benin; predominantly desert and sparsely populated in northern portion of the country
- Total fertility rate: 6.62 children born/women, one of the highest in the world
- Under-five mortality rate: 104 per 1,000 live births
- Percent children 12-23 months vaccinated with DTP3: 79% (DHS, 2012)
- Percent children 12-23 months completely vaccinated: 52% (DHS, 2012)
- 45% of districts have poor accessibility to health facilities with more than half of Niger's population having to travel more than 5 km to access basic health services, including immunization



KEY CONSIDERATIONS AND LESSONS LEARNED

Lessons learned confirm other initial studies on Solar Direct Drive equipment. The daunting scale of Niger adds a layer of complication and also more opportunities for learning.

Planning Process

The useful tools were WHO Cold Chain Inventory and Gap Analysis Tool. It was used for planning and broader supply chain design goals. The planners had a long-term vision and included the plans for a regional hub as part of their analysis and planning. This hub is designed to strengthen distribution yet is still under development.

Procurement Process

In addition to procuring cold chain equipment, the team also included one set of spare parts for every 10 refrigerators, filling a gap that often exists. These spare parts are placed at the district level for ease of distribution when needed.

Installation Process:

- Installation was performed by the MOH service department (SERMEX) with technicians trained by UNICEF/Supply Division. This core team worked with regional SERMEX and immunization program logisticians to distribute and install 354 refrigerators.

- Cascade training was successful and helped achieve the scale-ability of this effort.
- The installation team updated the national inventory during installation.

On-going Monitoring and Evaluation

- Health workers track the temperature of the equipment through built-in thermometers, recording the temperatures and alarms twice daily as per protocol. Accurate monitoring could be improved with better data collection processes or through different technology such as remote temperature monitoring.
- The team developed the cold chain equipment maintenance plan with an appropriate and approved budget, including procurement of maintenance tools and spare parts, supervision, and training of maintenance teams.
- The maintenance plan details out basic preventive maintenance that should be done regularly by health facility staff, providing additional needed guidance and support to ensure the performance of the new equipment.

CONCLUSION AND FINAL THOUGHTS

Niger proactively responded to the EVM Assessment through strategic planning for upgrading the cold chain equipment with the most appropriate technology. MOH leaders have also put in place strong maintenance plans to ensure continued high performance of that equipment. These actions have put Niger primed to improve vaccine availability and, ultimately, improve the number of children immunized.



Newly installed solar panels



A health facility worker getting training on FridgeTag 2 for temperature monitoring.



Walk-in cold room, Tahoua, Niger