

Leveraging the private sector to strengthen immunization supply chains through outsourced cold chain maintenance in Nigeria

Supporting the improvement of cold chain equipment uptime by implementing outsourced preventative maintenance and repair services to improve vaccine availability and immunization coverage.



Project Last Mile

Context

Nigeria is Africa's most populous country. It has some of the highest under-five mortality rates and lowest vaccination rates in the world. It has been estimated that 25% of the under-five deaths could be prevented through routine immunization¹. However, availability of life-saving vaccines is dependent upon a reliable cold chain. In Nigeria 10,000 functional cold chain systems are needed to cover all the country's health facilities, but 41% of clinics have no vaccine refrigerators and 35% of existing vaccine refrigerators are non-functional². In contrast, the Nigerian Bottling Company (NBC, the local Coca-Cola Bottler) achieves over 99% uptime of its refrigeration units across Nigeria³.

Poor cold chain equipment (CCE) maintenance risks a country's ability to safely immunize children, reach targeted populations, and protect its return on investment in vaccines. The Nigerian government and donor partners have therefore prioritized improving the country's cold chain infrastructure and vaccine distribution systems to strengthen the public health system's immunization capacity and coverage.

Our response

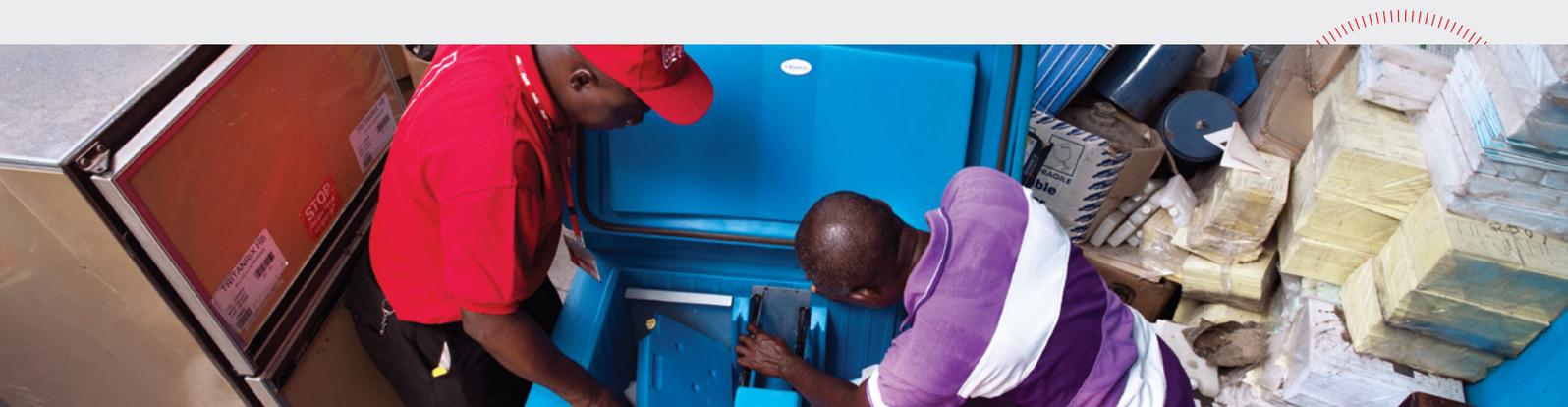
Project Last Mile uses the Coca-Cola system's expertise to help improve uptime and maintenance of vaccine CCE and make life-saving vaccines more accessible and available to save the lives of children in Nigeria.

Outsourced preventive maintenance and repair services are used successfully in private sector models and have the potential to improve CCE uptime and increase vaccine availability. Yet, few examples of successful preventive outsourced maintenance programs exist in the public sector. Project Last Mile ran a successful outsourced cold chain maintenance agreement with Lagos State that has potential to be replicated in other Nigerian states and African countries.

¹Stokes-Prindle C., Wonodi C., Aina M., Oni G., Olukowi T., Pate M. A. et al., "Landscape Analysis of Routine Immunization in Nigeria: Identifying Barriers and Prioritizing Interventions," International Vaccine Access Centre (IVAC), Johns Hopkins University School of Public Health, Bloomberg, 2012.

²Clinton Health Access Initiative. 2018. Lagos State Costed Cold Chain Rehabilitation and Expansion Plan. Unpublished.

³Clinton Health Access Initiative. 2018. Lagos State Costed Cold Chain Rehabilitation and Expansion Plan. Unpublished.



Global partners:



Our approach

In 2016, Project Last Mile was invited by the Bill and Melinda Gates Foundation to evaluate how The Coca-Cola System's expertise and existing maintenance networks in Nigeria could strengthen the public health sectors CCE uptime. Since 2016, Project Last Mile has partnered with Nigeria's National Primary Healthcare Development Agency (NPHCDA), the Lagos State Primary Health Care Board (PHCB), and the Clinton Health Access Initiative (CHAI) to improve availability of vaccinations by applying the Coca-Cola system's expertise and maintenance networks to strengthen public sector CCE capacity.

Project Last Mile worked with NBC and FrigoGlass (the sole source provider of CCE repairs and maintenance for NBC) to train NPHCDA trainers and technicians in preventative maintenance for CCE. Following the success of this intervention, in 2019 Project Last Mile piloted an outsourced CCE maintenance and repairs intervention in Lagos State, with Frigoglass contracted as the service provider for PHCB's existing CCE.

Project benefits

➤ Specialized technical training was delivered to senior NPHCDA engineers:



NBC validated the tools/accessories/required parts and delivered the training to eight senior engineers.

➤ Primary preventative maintenance training was delivered to NPHCDA technicians:



Curriculum developed from The Coca-Cola Company and NBC materials;



Train-the-trainers model developed for NPHCDA staff and validation of tools/accessories/parts required by the NBC; and



Successful training of NPHCDA staff in a specialty-level preventive maintenance course for refrigeration units – eight trainers equipped 121 technicians.

➤ In 2019, the Lagos State outsourced cold chain maintenance pilot project commenced:



At the beginning of the pilot, 34% of 362 CCE evaluated for service were non-functional. Frigoglass repaired 134 non-functional CCE units in Lagos State and provided preventative maintenance to 359 of the 362 units (99% coverage) during the six-month pilot. A total of 174 repairs were made (some units required multiple repairs).



CCE repairs were seen as having a direct and tangible impact on the public sector's ability to provide immunizations and save lives. Private sector stakeholders valued the work as a means of giving back to their communities.



In addition to repairs and maintenance, the pilot also provided critical data on equipment failure rates and cost of maintenance that can be used for more cost-effective procurement decisions in the future.



Stakeholders described tangible connections between Project Last Mile's work and improved vaccine availability, as well as early signals of a broader cultural shift toward a 'maintenance mindset' to sustain impact.

Through the Lagos State pilot, Project Last Mile showed that leveraging an outsourced maintenance model can be a viable, cost-effective method to maintain and improve the uptime of vaccine CCE. The success of this model can be replicated and scaled to improve the effectiveness and sustainability of the public sectors cold chain systems across Nigeria and other African countries.

