Overview

PATH envisions a world in which all countries have supply chains that connect people with the practices and information they need so that lifesaving drugs, vaccines, and commodities are available on time, in sufficient quantity, and at a reasonable cost to everyone who needs them. For more than 35 years, we have collaborated with a variety of international and in-country public- and private-sector stakeholders to:

- Deploy information and communications technology solutions that make it easier to assess and use data in decision-making.
- Advance novel cold chain equipment to safely and cost-effectively store and transport temperature-sensitive products—even in remote areas lacking consistent access to electricity.
- Improve product presentations and packaging to decrease volumes for transport and disposal, bundle essential product components, and reduce product loss.
- Work together with ministries of health to identify and test appropriate solutions from local or global sources, set policies, and advance global health discussions.
- Advise the private sector on improved handling of vaccine and temperature-sensitive pharmaceuticals and influence public policy on private health care regulation.

PATH in Uganda

Operating in Uganda since 2002, PATH has partnered with Uganda’s government to introduce tools to prevent and detect cancer, offer women new contraceptive choices, get more vaccines to more children, and craft policies that lay the foundation for health for every Ugandan.

To advance work on immunization, since 2007 PATH staff have closely collaborated with the Uganda National Expanded Programme on Immunization (UNEPI), and we now serve as a key member of the National Coordination Committee for immunization as well as the National Immunization Technical Coordination Committee, which provides technical oversight for immunization in Uganda. We are an active member of all other Expanded Programme on Immunization advisory committees and subcommittees, providing technical assistance to implementation of the Effective Vaccine Management improvement plans and annual work plans. We also have a proven track record in evaluating and introducing health technologies and interventions and ensuring that these solutions are locally relevant and sustainable.

Evaluation of equipment and interventions

In collaboration with UNEPI, we leveraged PATH’s Cold Chain Equipment Management tool to assess available data and help local governments plan for new vaccine introductions. These efforts both supported systems strengthening in Uganda and helped advance the development and optimization of the tool for use in other countries.

In 2017 and 2018, UNEPI, with technical guidance from the World Health Organization (WHO) and PATH, piloted
the use of the controlled temperature chain (CTC) approach in the provision of human papillomavirus (HPV) vaccine. CTC allows vaccines to be removed from refrigerated temperatures for the final three days at the end of the supply chain. This can ease the burden of logistics and improve vaccine coverage, especially when vaccines are administered in campaign settings or outside of the health center, as with HPV vaccine, which is often administered at schools. The team learned that successful use of CTC requires significant microplanning efforts as well as adequate training and supervision. After participation in these activities, the Ministry of Health (MOH) and involved districts are empowered to use the benefits of CTC for HPV vaccine delivery.

In 2019, PATH collaborated with UNEPI to evaluate the performance and acceptability of a battery-powered portable refrigerator in the immunization program in Uganda. This refrigerator belongs to a category of equipment recently opened for prequalification by WHO. The activity generated several recommendations to the manufacturer to improve battery life, battery monitoring, and appropriate sizing for transport and use.

**Health system policy and research**

In 2019, PATH collaborated with UNEPI to finalize *Cold Chain Equipment Inventory Guidelines*, a useful resource for improving the quality and accuracy of national cold chain equipment inventory data.

Research conducted in 2019 in Uganda contributed to the Vaccine Innovation Prioritisation Strategy work, a partnership between Gavi, WHO, the United Nations Children’s Fund (UNICEF), the Bill & Melinda Gates Foundation, and PATH. PATH collected information from decision-makers and frontline health workers on nine vaccine innovations. This research contributed to the final prioritization of microarray patch delivery devices, heat-stable and CTC qualified vaccine formulations, and barcodes for vaccines. These innovations will now benefit from coordinated efforts to support their advancement.

PATH in collaboration with UNICEF, National Medical Stores, and UNEPI conducted a temperature-monitoring study following a recommendation from the 2018 vaccine management assessment. By measuring the temperature of a sample of vaccine shipments as they traveled throughout the cold chain, this study provided a snapshot of the health of the cold chain and identifies areas for improvement.

**Additional technical support**

In 2015, PATH conducted a study to uncover the primary causes of refrigerator and other cold chain equipment failures, suggesting action that stakeholders, including manufacturers, could take to ensure a functional, long-lasting cold chain in Uganda and other countries.

As a member of the Gavi Cold Chain Equipment Optimisation Platform (CCEOP) program management team, PATH supported the MOH in the application for the phase 1 and 2 CCEOP grants. PATH continues to support CCEOP implementation through development of strategic plans and reports and facilitating trainings and supportive supervision during installation of the new equipment.

In 2020, PATH, with support from UNEPI and National Medical Stores, conducted a pilot to evaluate the use of ODK-X, a mobile cold chain inventory application for improved management of refrigerators and tracking of maintenance activities. This pilot has resulted in additional resources to scale the innovation countrywide.

PATH also conducted total cost analyses of cold chain equipment (including refrigerators and temperature monitors) to help UNEPI develop and build its evidence base for decision-making about equipment purchases. This work continues to provide data useful to the broader global community working to strengthen immunization supply chains. Cost-effectiveness studies have been conducted by PATH to inform the introduction of HPV vaccine and more recently rotavirus vaccine.
**Advocacy**

Our team in Uganda is leading country-level advocacy efforts to secure the political and financial commitments of key stakeholders, helping accelerate the adoption of global standards and emerging technology solutions that strengthen the vaccine supply chain. In 2016, PATH conducted a landscape analysis of the immunization supply chain policy environment in Uganda with recommendations for the system challenges. In 2019, through the PATH advocacy efforts, the government increased the budget allocation toward vaccines procurement from 9 billion to 21 billion Uganda shillings.

**Partners**

Collaborations across all sectors have proven integral to our strategy for demonstrating impact and taking innovations to scale. Key partners in Uganda have included the Uganda MOH; the Uganda Health Marketing Group; UNICEF; Gavi, the Vaccine Alliance; the Clinton Health Access Initiative; WHO; UNEPI; and National Medical Stores.

**Contact information**

For more information on our work and staff capabilities in supply systems and equipment in Uganda, please contact:

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