



Annual Impact Report 2023





A Message from Our CEO

Data-infused health systems are in demand. We all want to be ready for the next pandemic and a changing climate. That means accurate and timely information must flow up from clinics to the central Ministry of Health, and data-informed resources must flow out to clinics. But how do we change existing practices? Will new technologies work in off-grid clinics? Are Last Mile health workers ready for digital tools? These challenges are too often left for another day as we nod our heads in agreement that data is indeed very important.

What our team accomplished in 2023 gets at the very heart of the biggest question that multilaterals, Ministries of Health, and technologists have all been grappling with but rarely articulating: **What does the digital transformation of health systems really require?**

The digital transformation of health systems is easier said than done, but together with Ministries of Health, we are achieving that transformation.

This past year, Nexleaf doubled down on driving the **effectiveness** of ColdTrace, our remote temperature monitoring solution for vaccine cold chains. We are determined to ensure that our platform makes good on its promise to help countries shift from analog practices to data-driven, digital vaccine equipment management.

We aim to equip health workers with the data, skills, and tools they need to save lives.

Through the dedication, creativity, and determination of our global team, **we more than doubled the effectiveness of ColdTrace in 12 months.**

We accomplished this by working shoulder-to-shoulder with our partners in Ministries of Health, and we documented our learnings to improve the installation, roll-out, and sustainability of our data solution. We called this multi-country initiative **Operation Accelerate**, and you can learn all about it in this report ([page 10](#)).

So what does true digital transformation require? In my view, there are two main pillars:

- **Prioritize trust and ownership with Ministries of Health.** That means insisting on true local ownership and control of data and systems, and as always, listening to what countries need and want.
- **Meet health workers where they are.** Workers are willing to adopt new technologies, especially when they trust the tools to actually work for their specific needs.

We're also proud to highlight the remarkable example of Malawi, where the Ministry of Health took the lead and articulated a clear vision for data-driven vaccine cold chain management ([page 5](#)). One inspiring outcome was the course

we co-designed with the Malawi University of Business and Applied Sciences ([page 9](#)). In addition to enrolling current and future vaccine managers in Malawi, the course has also seen enrollment from staff at USAID, UNICEF, and other local partner organizations working together to keep vaccines potent through the Last Mile.

In 2024, we're setting our sights on the **Connected Clinic**: our vision for how data from all equipment, not just vaccine refrigerators, can drive a more resilient, responsive, equitable health system. **As ever, we aim to equip health workers across the Ministry of Health with the data, skills, and tools they need to save lives.**

Thanks to all of you who partner with us and support our work. The past year set the stage for even bigger things to come. While everyone seems to be talking about the opportunities and challenges of data, our Nexleaf team is living and breathing—and truly **realizing**—the digital transformation of global health. Stay tuned.

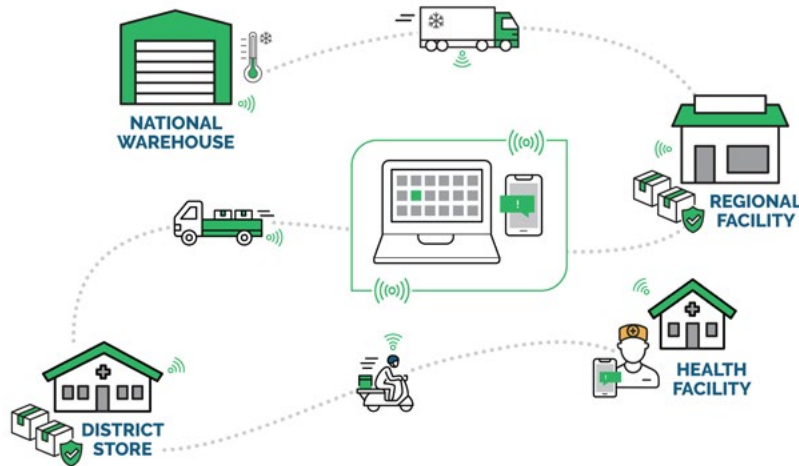
Sincerely,

Nithya Ramanathan, Ph.D.
CEO & Co-founder

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CURRENT IMPACT



**MOBILIZING
CONTINUOUS DATA FROM
28,900+
CLINICS & EQUIPMENT
IN 28 COUNTRIES**

Protecting Vaccines Through the Last Mile

ColdTrace is our end-to-end solution for the vaccine cold chain.



6 COUNTRIES
AT SCALE

HOME TO
1 IN 4 BABIES
BORN EVERY YEAR



Upskilling Health Workers

Data is only beneficial when it helps people solve real-world problems.



2792
HEALTH WORKERS TRAINED

Medical Equipment Dashboard

Our innovative methodology collected and visualized continuous usage data from:

8 EQUIPMENT
TYPES

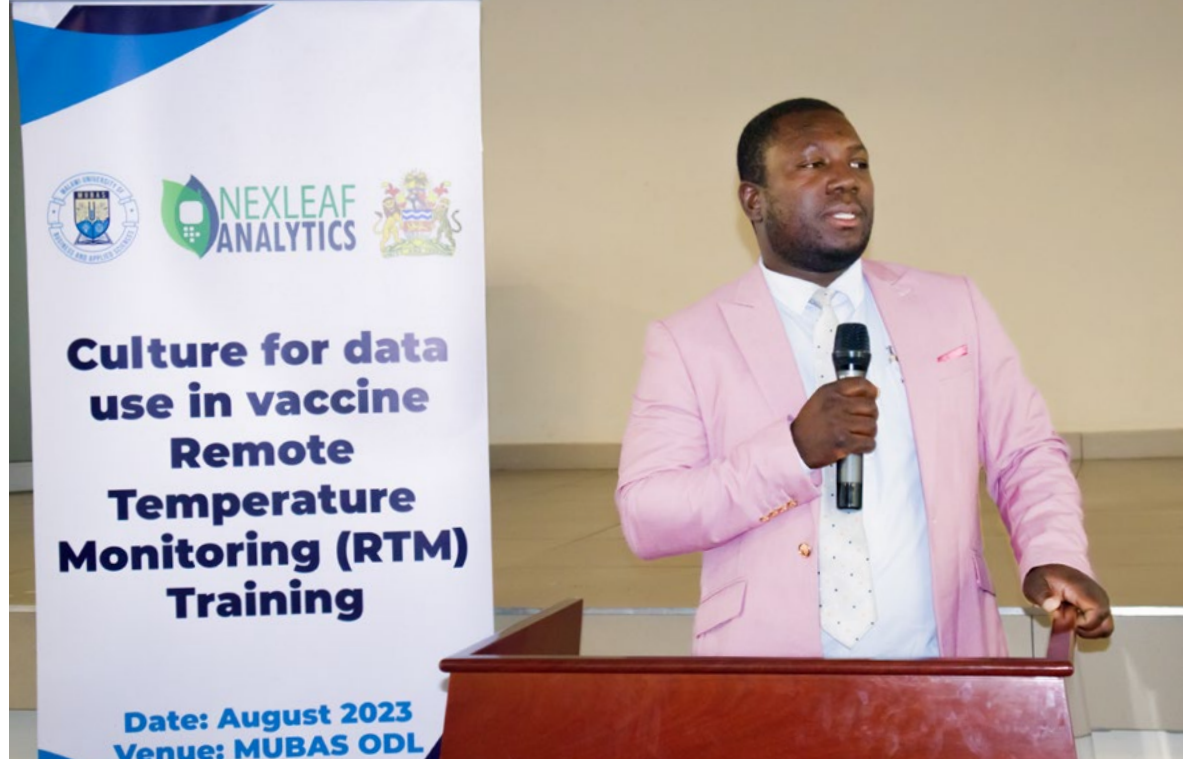


7 SITES

108 PIECES OF
EQUIPMENT

Building a Culture of Data in Malawi

by Patience Mfunu,
Senior Project Manager



Adopting technology requires changes in behavior, beliefs, skills, processes, and systems.

Otherwise, despite the promise and opportunity of a new technology, it will just gather dust on the shelf.

In December 2021, Malawi's Ministry of Health Expanded Program on Immunization (EPI) recognized the need for a remote management solution for its vaccine cold chain. Malawi wanted better inventory tracking and assurance that its fridges and freezers were keeping vaccines safe at every distribution level, even on weekends and holidays. In response, UNICEF and Nexleaf partnered with EPI to deliver and install 850 ColdTrace remote

temperature monitoring (RTM) devices across Malawi to mobilize real-time data from cold chain equipment.

However, experience has taught us that technology on its own is not enough to achieve impact. Adopting technology requires changes in behavior, beliefs, skills, processes, and systems. Otherwise, despite the promise and opportunity of a new technology, it will just gather dust on the shelf. With support from the Patrick J. McGovern Foundation, we collaboratively designed a project with the MoH to drive the adoption of ColdTrace RTM by building a culture of data in Malawi.

In February 2022, I joined Nexleaf as Project Manager to provide continuous support and advice to stakeholders at all levels of the MoH. From the beginning of the project, I helped Malawi EPI develop its own structures and practices for monitoring RTM devices and using RTM data during weekly meetings to discuss data, issues, and opportunities.

Creating Data Use Practices: A Collaborative Approach

Early on, we engaged frontline RTM users in health facilities and conducted an in-person baseline assessment to understand their skills, behaviors, and beliefs. We learned that:

- Cold chain data is generally accessed and shared informally. The most frequently cited sources of information about

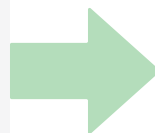
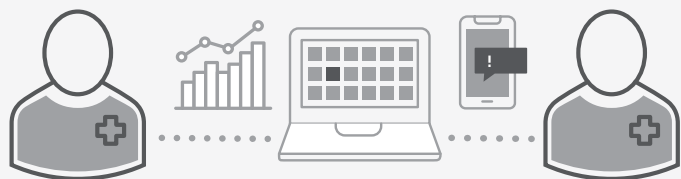
cold chain data were fellow health workers, via phone calls, WhatsApp groups, and direct messages.

- Health workers were responding to SMS and RTM device alerts, but they were not yet able to access and use cold chain data in a systematic way to optimize fridge management.

We held two trainings for a total of 120 district EPI coordinators and cold chain technicians from all 28 districts of Malawi. The sessions were **highly interactive and practical**, covering the basics of RTM devices and troubleshooting, as well as how to access and use data from ColdTrace.

Throughout the project period, we accompanied EPI's national and regional staff on supportive supervision visits to health facilities to observe how RTM data use was helping EPI personnel protect vaccines. We also identified Data Champions who were using RTM effectively, shared their stories, and connected them to other users. In addition to strengthening the culture of data in Malawi, these activities helped Nexleaf improve our services. User feedback from Malawi helped us develop support guides and improve our ColdTrace product for all customer countries. **This type of two-way communication and collaboration is unique to how Nexleaf works; we are continually supporting and learning from our partners.**

When Health Workers Use Data, Vaccine Protection Improves



I use RTM devices



I use the ColdTrace data dashboard



I review cold chain data at least once a week



I share cold chain data at least once a week

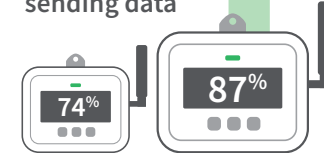


Nexleaf conducted two trainings for 120 district EPI coordinators and cold chain technicians from all 28 districts of Malawi in May and August of 2022. Baseline (May 2022) and endline (August 2023) survey data from training participants summarized above showed that health workers improved how they access and use RTM data.

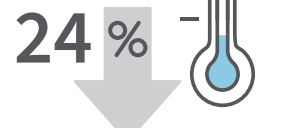
Total time spent in safe temperature range



Equipment sending data



WHO Cold Alarms



WHO Warm Alarms



Nexleaf compared cold chain equipment performance data at the beginning of the project (February/March 2022) with performance at the end of the project (August/September 2023) for 889 equipment units in all 28 districts of Malawi. The metrics above reflect WHO standards for the definition of cold alarm, warm alarm, and safe temperature range (2 °C to 8 °C).

Digital Transformation Requires Commitment and Trust

Through the Culture of Data project, Nexleaf has made tremendous progress building trust in RTM data to transform Malawi's MoH EPI from a completely analog, paper-based system to a modern, digital system.

This work helped us build and test a sustainable and cost-effective model for supporting human-centered information technology adoption within a health system. Ensuring local MoH leadership of the project activities is critical, especially for sustainability in the long term. Nexleaf and the MoH developed an adaptive and trusting relationship to achieve results together. The design and implementation of the project ensured that the MoH retained leadership and ownership of project activities. **In 2024, Nexleaf's Rapid Response & Repair (R3) initiative will scale this dynamic, highly collaborative approach to serve more countries in their quest to achieve data-driven health systems.**

"Through ColdTrace we know how to interpret data from RTM devices and we are able to come up with informed decisions to ensure that vaccines are managed."

– **Gray Phiri**, EPI National Cold Chain Manager for Malawi

Launching a University Course on Using Data to Manage Vaccine Equipment

The Culture of Data project in Malawi showed that health workers are eager to upskill their use of technology to help them do their jobs better and improve patient outcomes. That's why Nexleaf partnered with the Malawi University of Business and Applied Sciences (MUBAS) to develop and deliver a first-of-its-kind university course focused on how to use remote temperature monitoring data to manage vaccine cold chain equipment.

In September 2023, 115 participants took the course in person at MUBAS. The university enrolled an additional 95 participants in an online version. In addition to EPI coordinators and other vaccine officers who work at the MoH, **the course enrolled staff from USAID, UNICEF, Chemonics, VillageReach, and Jhpiego** working on immunization initiatives in the country. The mix of participants demonstrates

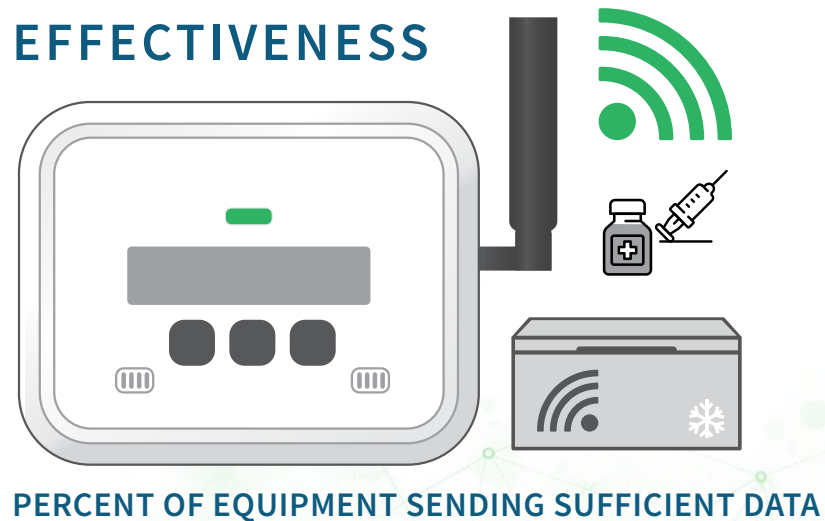


strong demand for this type of curriculum and delivery style co-designed by Nexleaf and MUBAS.

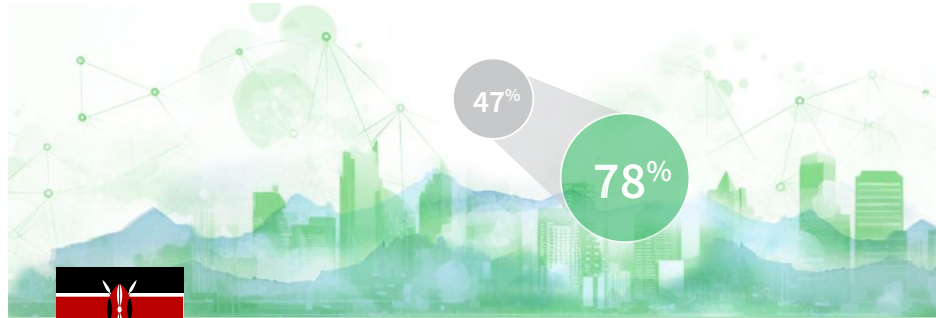
According to **Dr. Save Kumwenda**, head of the Department of Environmental Health, the faculty who facilitated the sessions found this innovative course structure very useful. **The Culture of Data project has sparked new and creative thinking around the course offerings for Malawi's health workers overall.**

The course will continue to be offered through MUBAS's Department of Environmental Health, and as a stand-alone course for EPI and other immunization partners. The Malawi MoH is currently considering how to integrate the data-use modules into the existing country-wide EPI curriculum. Both Nexleaf and our partners are excited to see the course continue into the future.

Operation Accelerate in Action



ColdTrace is Nexleaf's flagship product: a wireless remote temperature monitoring (RTM) solution for data-driven management of vaccine cold chain equipment. Nexleaf provides robust support to ensure frontline health workers understand how to maintain the devices and use the data to protect the potency of vaccines. In 2023, Nexleaf's Impact Consultants worked shoulder-to-shoulder with Ministries of Health in **Kenya, Tanzania, Pakistan, and Malawi** to ensure that sufficient data is flowing to protect vaccines, modernize system management, and save lives.



KENYA

For any MoH, driving the adoption of digital vaccine system management is only one of numerous competing priorities. We worked with our long-standing partners in Kenya's MoH on a plan to troubleshoot ColdTrace devices that fit together with other MoH activities. In the 27 Kenyan counties where we conducted troubleshooting and re-training on RTM data and maintenance, the percentage of ColdTrace devices sending sufficient data increased from 47% to 78%.



"I take pride in the success of our work, particularly the Ministry of Health recognizing the value of RTM data. My hope is that we will be able to extend our impact to even more facilities in the coming year."

– Audrey Lukela, Impact Consultant



TANZANIA

Operation Accelerate in Tanzania focused first on communicating the benefits of RTM for vaccine management with government agency leaders and Medical Officers. We then engaged Regional and District Immunization and Vaccine Officers (RIVOs and DIVOs) to reinforce the many use cases of ColdTrace data. In the first OA cohort, ColdTrace effectiveness skyrocketed from 15% to 63%. The second OA cohort reached 76% effectiveness.



"As Nexleaf, we adopt a Human-Centered Design approach, offering all stakeholders the opportunity to participate and share their perspectives. Most importantly, our emphasis is on fostering ownership among stakeholders to ensure sustainability."

– Geoffrey Gundah, Impact Consultant

800+



PAKISTAN

In Pakistan, Operation Accelerate is focused on bringing together all collaborators, including Nexleaf, the Federal Directorate of Immunization (FDI), and UNICEF, to drive systems improvement. One major challenge has been ensuring the 2G SIM cards installed in the ColdTrace RTM devices have active data bundles. Continuing to resolve connectivity challenges will be essential as we support the installation of over 800 additional ColdTrace devices in 2024.

“My goal for 2024 is to ensure that every district in Pakistan where RTM devices are installed is actively receiving data and has health workers trained on how to use it.”

– Shaji Malik, Impact Consultant



83%



MALAWI

In conjunction with the Culture of Data project, Operation Accelerate in Malawi built trust and confidence with the Ministry of Health to ensure the effectiveness of RTM. One major challenge was a fuel shortage, which made taking trips to visit all the necessary sites especially difficult. Thanks to the ingenuity of our collaborative team, we met all our objectives.

“Nexleaf follows our technology and closely supports the customer. This is the reason we are the preferred service provider. We walk shoulder to shoulder with Ministries.”

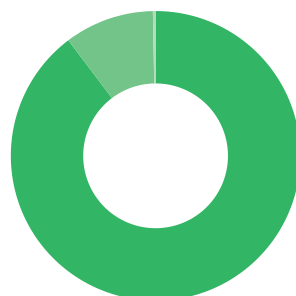
–Tisaye Kalua, Impact Consultant





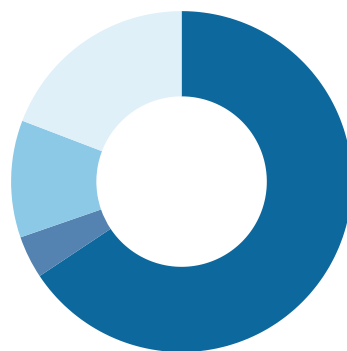
Financial Dashboards

2022 Revenue by Source



		2022	2021
89.7 %	Foundation & Grant Revenue	\$ 15,290,155	\$ 4,270,376
10%	Earned Revenue	\$ 1,619,866	\$ 526,022
0.3%	Individual Revenue	\$ 50,863	\$ 55,161
	Total Revenue	\$ 16,960,884	\$ 4,851,559

2022 Expenses by Program



		2022	2021
65%	Vaccine	\$ 4,454,762	\$ 2,503,654
4%	Clean Cooking	\$ 277,265	\$ 403,341
11%	Medical Equipment	\$ 767,429	\$ 546,042
19 %	Operations	\$ 1,319,328	\$ 468,813
	Total Expenses	\$ 6,818,784	\$ 4,188,950

Recognition & Support

We are fortunate to have the support of many incredible partners. Thank you for helping to advance Nexleaf's impact in 2023.

- Autodesk Foundation
- The Bridgespan Group
- The ELMA Vaccines and Immunization Foundation
- Fast Forward
- For Impact
- Gavi, the Vaccine Alliance
- Global Health Labs
- James & Kaye Slavet
- MacKenzie Scott
- Mulago Foundation
- PagerDuty
- Patrick J. McGovern Foundation
- Qualcomm Wireless Reach
- Reid Hoffman
- Rippleworks
- UNICEF

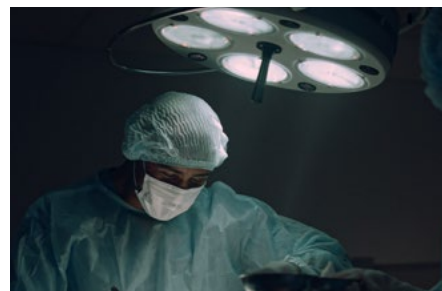
More 2023 Highlights



We launched [ColdTrace Transport](#), a solution for keeping vaccines safe during distribution trips. A nationwide scale-up is currently underway in Tanzania.



ColdTrace users can now log in using phone numbers in addition to email addresses. Map views customized for National Vaccine Officers (NVOs) are integrated into our dashboard analytics.



Our Medical Equipment & Power program is bringing our [use case for improved backup power management](#) to 15 additional hospitals in Kenya.



Our Manufacturing & Logistics team delivered 15,000 ColdTrace CTX devices, and [CTX is now available via the UNICEF catalog](#).



All-Team Retreat

Our week-long retreat in Cape Town, South Africa, in May 2023 brought us together in a spirit of collaboration and left us feeling inspired and energized. This event was an opportunity to strengthen relationships, spur cross-functional cooperation, discuss goals and metrics, and understand how each team drives our impact forward. We're always finding new ways to spark collaboration as we accelerate toward our Connected Clinic vision in 2024 and beyond.



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