2023 Impact Report

Global Health, Local Solutions

Data-driven, outcomes-focused healthcare



MEDTRONIC LABS

A Bold Approach to Last Mile Healthcare Delivery

Medtronic LABS is a health system innovator that designs and scales community-centered, tech-enabled solutions that drive population health outcomes. We partner with health systems to transform primary care by combining cutting-edge digital technology with data-driven care delivery.

Together, we're ushering in a new era of data-driven, outcomes-focused healthcare.

Our Mission is to expand access to healthcare for patient, families, and communities across the world.



What's Inside?

Reflections		3
Our 2023 Impact		5
Partnerships ————————————————————————————————————		8
Integrated Primary Care		9
Introducing SPICE 2.0	→ 1	0
Beyond Digitization ————————————————————————————————————	→ 1	2
Health Systems Strengthening ——	─ 1	5
Program Highlights ————————————————————————————————————		7
What's Next?	→ 2	7
Team	→ 3	8

Reflections

Dear Supporters,

2023 was a year of scaling sustainably, and our metrics – 33% increase in screenings, 40% increase in enrollments, and 47% increase in lives measurably improved – speak for themselves.

Our measure of success continues to be patient outcomes and we have committed this year to deepening health system relationships to save more lives. To ensure sustainable outcomes, we've focused on capacity building to deeply embed clinical decision support capabilities across all levels of care.

We're working in more counties and countries than ever – including launching our first programs in the United States and Bangladesh. We also scaled our existing work in Kenya and Sierra Leone through expanded partnerships with NovoNordisk, World Diabetes Foundation, and the Bill & Melinda Gates Foundation.

We believe that digital health has the power to transform health care systems, and that it is our responsibility to foster interoperable and open digital health ecosystems for a more sustainable digital health future.

In 2023 our digital health platform SPICE became open source and was named a Digital Public Good (DPG) by the Digital Public Goods Alliance (DPGA). We also know that the Al revolution will change the face of digital health. That's why we made key investments in building out data science and Al practice with the support of partners like the Patrick J. McGovern Foundation.

We couldn't have achieved any of this without our collaborators worldwide. Our focus remains on global health system transformation as we reimagine community and primary care to work for patients, health workers, and Ministries of Health.

Looking ahead, we'll continue to deepen these relationships. Together, we can build the next generation of data-driven integrated primary care applications with a focus on improved outcomes across the full spectrum of community health needs.

Thank you,

Medtronic LABS

Reflections

Strategies that shaped 2023



Health system strengthening through sustainable clinical and digital capacity building at national and regional levels.



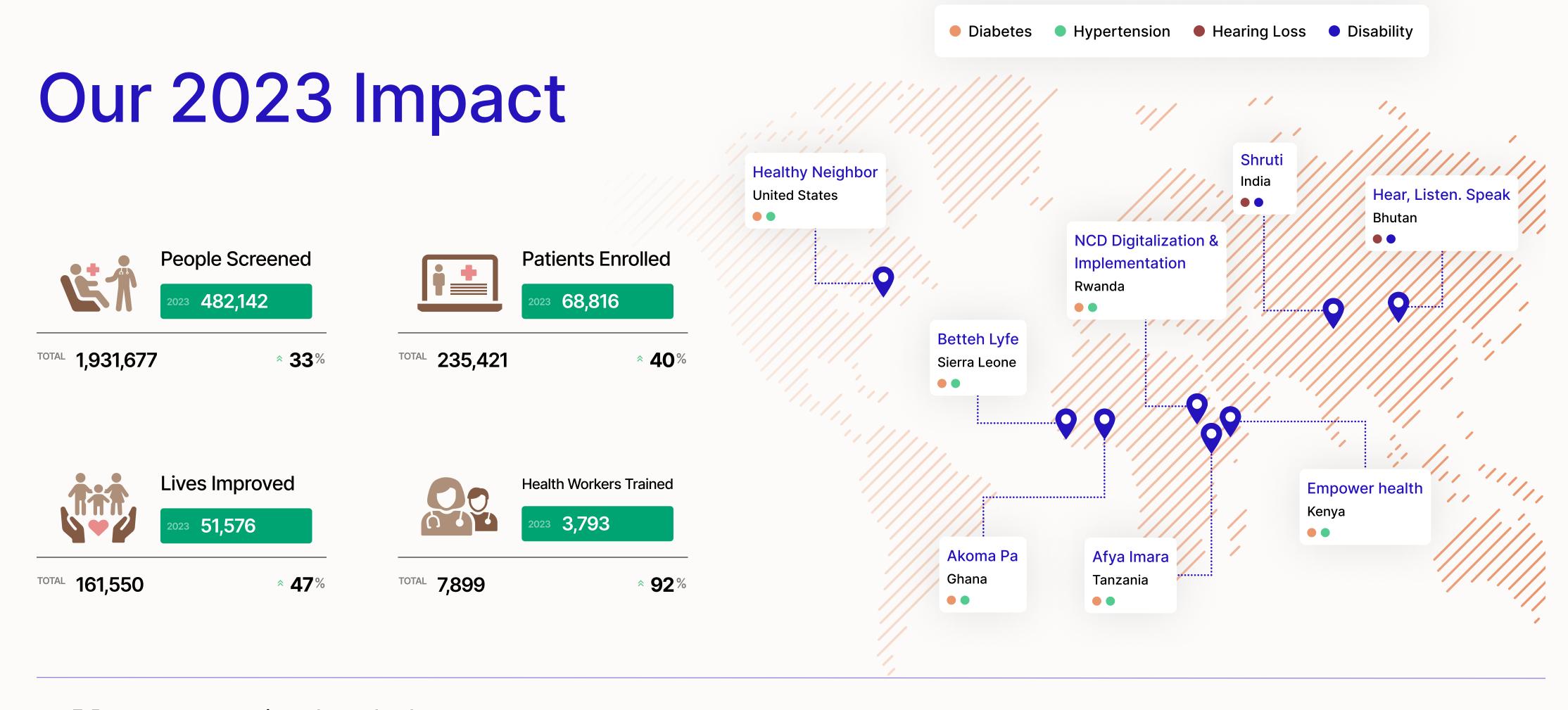
Moving past disease verticals for integrated community and primary care.



A focus on driving measurable clinical outcomes through scalable training of health system staff on data-driven approaches to care delivery.



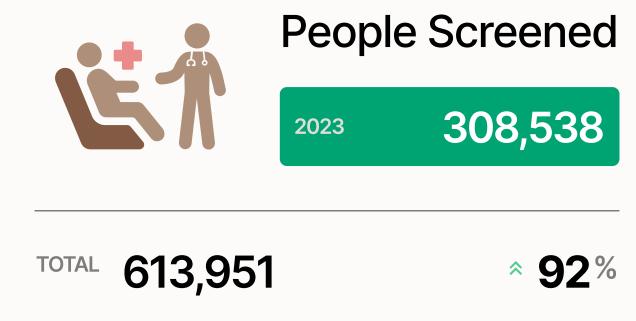
Harnessing the power of data science and Al to optimize health system operations.

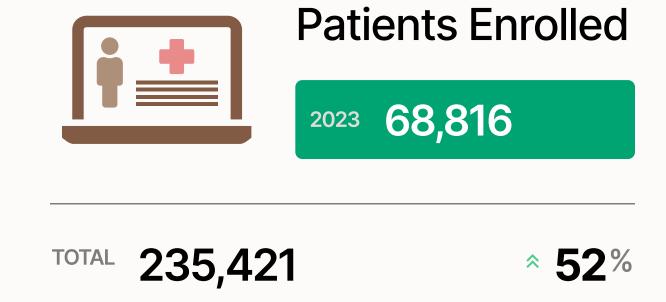


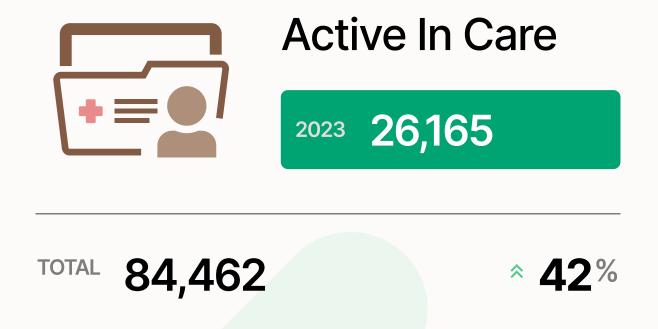
5 Program expansions launched

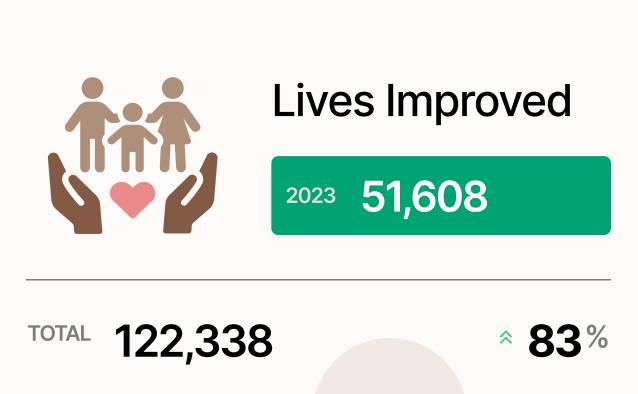
Our Impact by Disease Area

Hypertension & Diabetes









Our Impact by Disease Area

Hypertension & Diabetes

We're constantly evaluating our impact to ensure positive patient outcomes. In multiple peer-reviewed studies, Medtronic LABS has shown significant improvements in blood pressure and blood glucose for patients across multiple sub-Saharan African countries.

As we expand to integrated primary care, we will measure anticipate similar outcomes across disease areas and will regularly report on our findings.

View our publications at www.medtroniclabs.org/impact



Of Hypertension Patients With Blood Pressure Controlled In The Last 3 Months



Of Type 2 Diabetes Patients With Blood Glucose Controlled In The Last 3 Months

Partnerships

In 2023, Medtronic LABS formed over 10 new partnerships with diverse stakeholders to promote better population health outcomes. These partnerships ranged from working closely with local governments to aligning efforts with large multilateral institutions.

We've established new partnerships focused on NCDs, such as hypertension and diabetes, and joined the Clinton Global Initiative with a Commitment to Action. We also reinforced our commitment to data science through an Al-focused partnership with the Bill & Melinda Gates Foundation.

We're focused on forming and deepening coalitions with a wider range of global health stakeholders to continue breaking down health verticals and integrating community and primary care.

Government

- Ministry of Health, Kenya
- Ministry of Health, Sierra Leone
- Ministry of Health, Bangladesh
- Ministry of Health, Bhutan
- Ministry of Health, Rwanda
- Rwanda Biomedical Center (RBC)
- Ghana Health Service

Private Health Systems

- Christian Health Association of Ghana
- Christian Health Association of Sierra Leone
- Christian Social Services Commission of Tanzania
- Virtua Health
- Corewell Health

NGOs and Foundations

- Patrick J. McGovern Foundation
- PATH
- World Diabetes Foundation
- Bill & Melinda Gates Foundation
- BRAC
- Clinton Foundation Clinton Global Initiative

Private Sector

- Novo Nordisk
- Sanofi Global Health Unit
- Roche

Technology Partners

- Google
- AWS
- Kings College, London

Development and Multilaterals

- GIZ
- KOICA
- The Global Fund
- Africa CDC
- UNICEF
- UN Technology Bank
- UNDP Digital X
- WHO
- Community Health Impact Coalition

Care Without Compromise

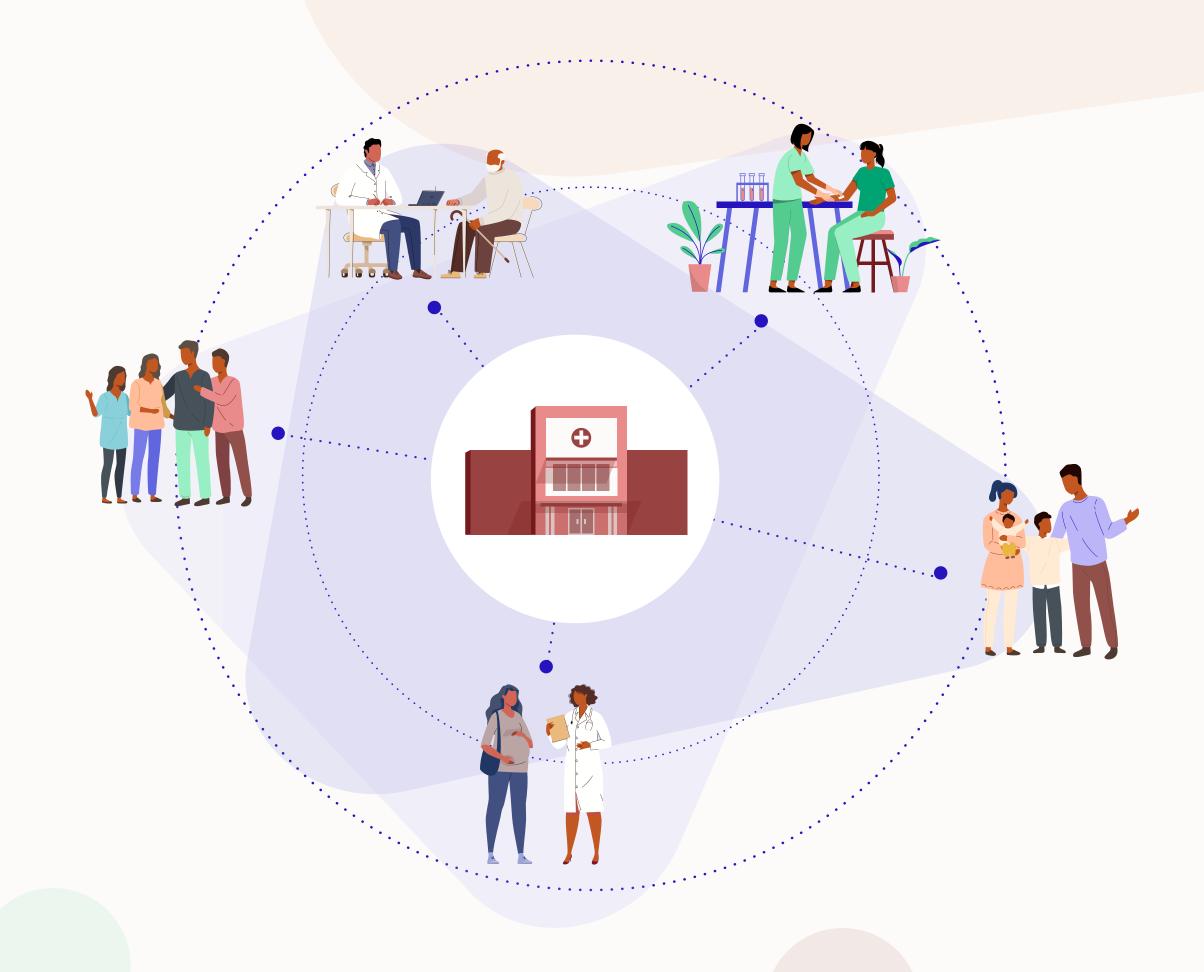
Integrated Primary Care

Medtronic LABS began with a focus on non-communicable diseases (NCDs) like hypertension and diabetes. After proving that the SPICEenabled care model and approach drives clinical outcomes, we expanded to approach to address any condition treated at the primary care level including NCDs, malaria, TB, HIV, child health, and immunization.

Today, Medtronic LABS is focused on integrated primary care not disease verticalization, while maintaining our core model focused on data-driven longitudinal disease management.

Rather than entrenching disease verticals by treating conditions in isolation, we design around the patient by preventing, treating, and managing the full spectrum of conditions.

While our focus is integrated primary care with a horizontal approach, we don't compromise on clinical excellence within disease verticals. Clinical decision support ensures that patients are treated for their specific set conditions according to the latest WHO and health system protocols.

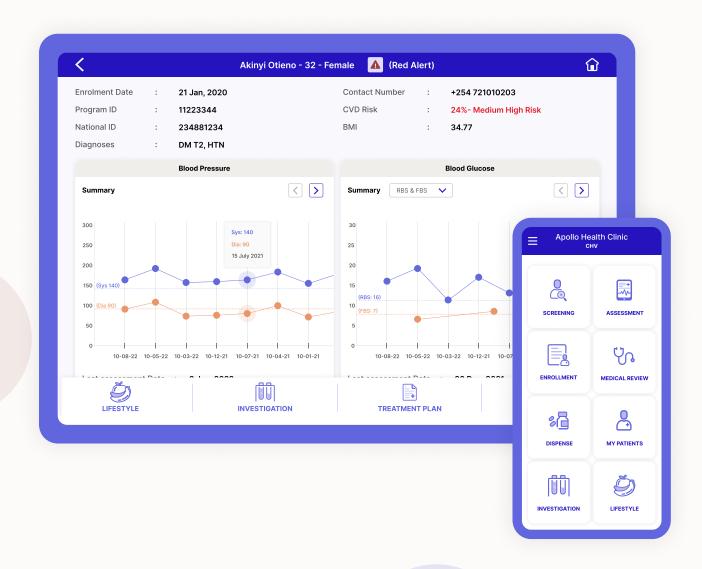


Introducing SPICE 2.0

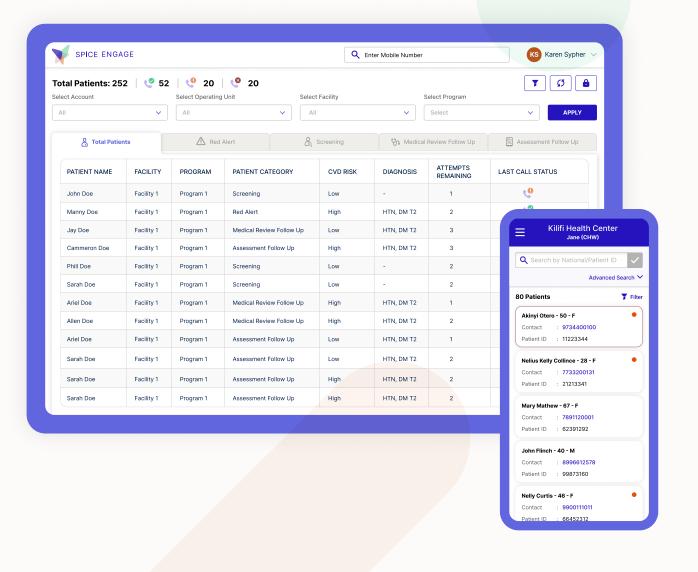
SPICE is a next-gen Digital Public Good that is transforming primary healthcare delivery through proactive, data-driven care.

We enable health systems to use data to help patients get better.

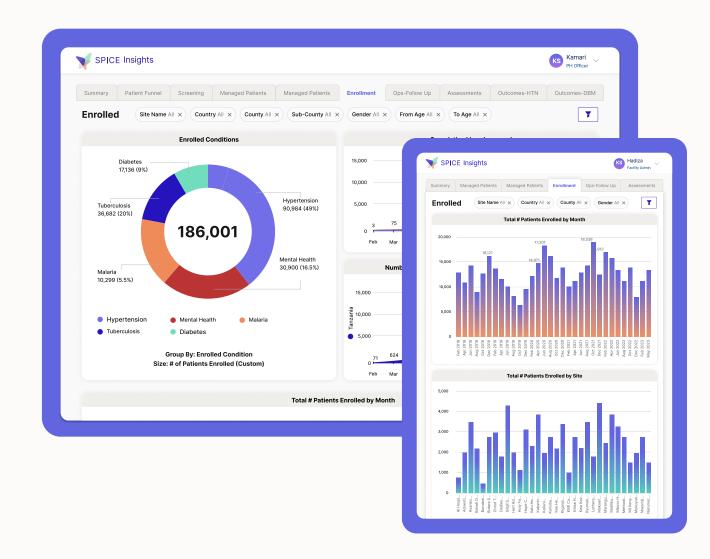
Integrated Primary Care Managment



Admin & Health Worker Performance



Population Health Analytics



Interoperability



SPICE is now FHIR enabled, with FHIR native elements that allow for enhanced interoperability and more.

Why FHIR?

- FHIR enables interoperability between systems, supporting the vision for thriving digital ecosystems.
- Allows for the adoption of WHO SMART Guidelines.
- Supports one common standard or one common set of ground rules for innovators.

Beyond Digitization

Digital Health with the Power to Transform

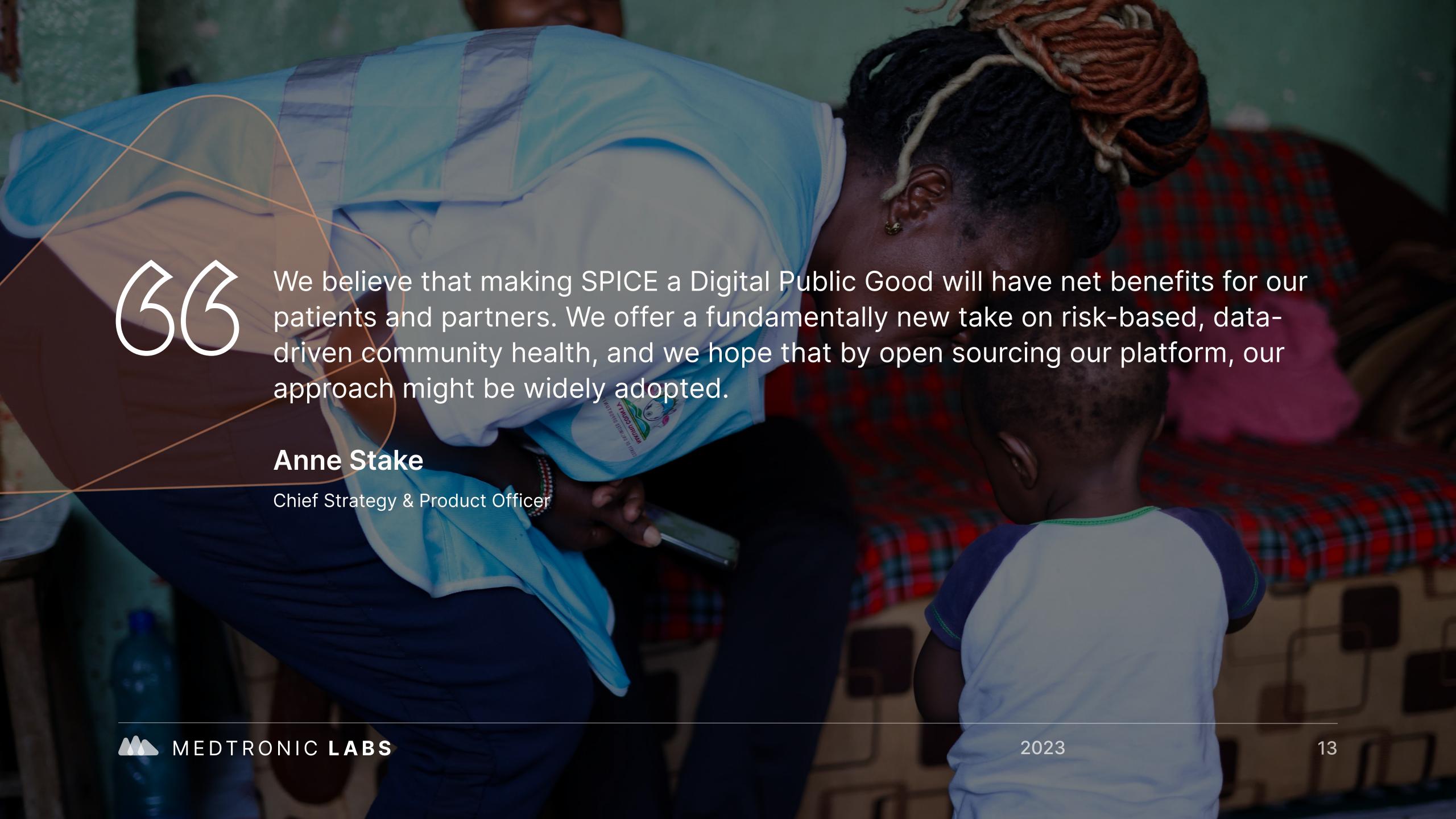
Digitization is not enough to build the health system of the future. Data collection alone does not drive outcomes. At Medtronic LABS, we enable health systems to collect high quality data and use those insights to make decisions that drive outcomes.

"With the data, we are able to better plan and put in place a response that is better informed."

– Dr. Daniel Wainaina, Nakuru County Medical Director

A collaborative approach that integrates digital technology, health systems strengthening, and partnerships will accelerate healthcare access across the world. And now our <u>open-source digital health platform</u>, <u>SPICE</u>, is officially a <u>Digital Public Good</u> (DPG), making SPICE a leading Digital Public Good for precision population health.





Investing in data science and machine learning capabilities

SPICE is transforming community health and primary care by equipping health workers with the right data at the right time. With support from the Patrick J. McGovern Foundation and The Bill & Melinda Gates Foundation, we're investing in building data science and machine learning capabilities to continue to support of Ministry of Health and health system partners.

Our Al portfolio focuses on driving patient outcomes and/or improving health system efficiency. For example, leveraging machine learning models, we can predict the likelihood of patients to go to the facility after a referral, and engage in care after enrollment allowing health systems to better support patients who may require extra help.

Generative AI, specifically large language models (LLMs), have demonstrated potential to transform healthcare delivery. We're developing specific LLM use cases within SPICE that address health system pain points and in partnership with Ministries of Health.

Here are a few ways Medtronic LABS is leveraging Al:

- Improving user engagement
- Predicting patient enrollment
- Increasing patient retention
- Hyper-targeted capacity building
- Optimizing phone-based outreach and tele-health
- Targeting community health activities
- Exploring early use cases in generative Al

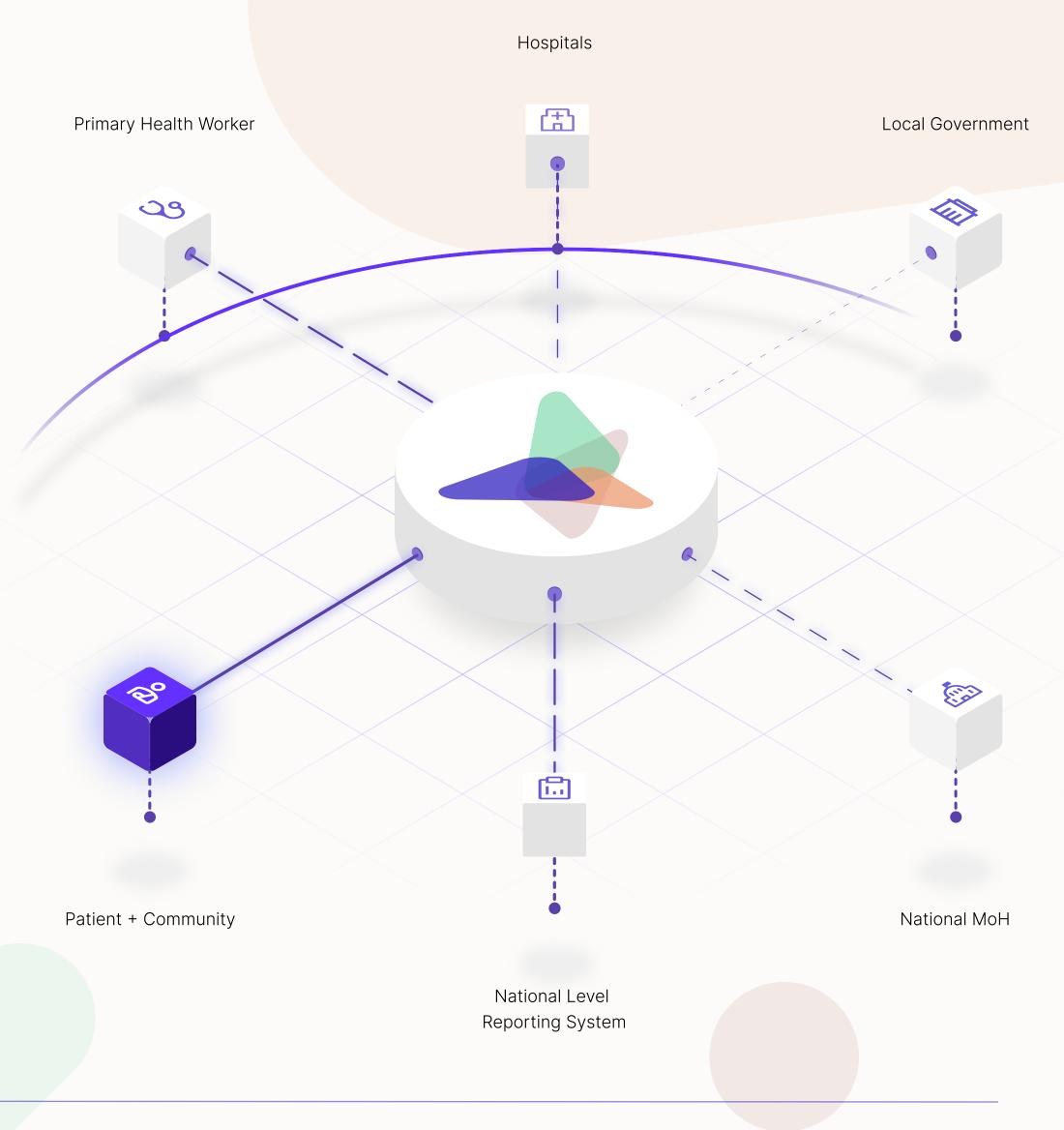
Health Systems Strengthening

We've seen time and time again that digital health alone does not move the needle on outcomes. We need to pair technology with a strong health system. That's why Medtronic LABS works alongside health systems and governments with a unique recipe or playbook to encourage health system transformation.

Our approach to health system strengthening is focused on longterm mentorship at every level of the health system to build sustained capacity. Equipped with data-driven insights from SPICE, service delivery is more efficient and effective. The SPICE technology works, but ultimately health workers do the work.

"People are the core. We know there's a lot of success in having a people-centered approach enabled by tech. We see it as innovation."

– Dan Master, director of health equity at Virtua Health



Stronger Implementation for True Transformation

To realize the true impact of digital health, technology needs to transform service delivery. Transformation does not happen overnight, so we support health systems to not only deploy SPICE, but to leverage data enabled by SPICE to deliver improved clinical services. Medtronic LABS implements alongside health systems, using site and user performance data to better target mentorship

Our focus areas include:

- Data literacy
- Performance management
- Program delivery
- Digital literacy
- Clinical guideline adherence







Empower Health

In the past few years, we have taken Empower Health to the next level, partnering with a broad set of funders to expand our reach in Kenya. Through SPICE, our platform that harnesses data-driven interventions tailored to clinical need, patients receive care at all levels (II-V). This year, we worked toward achieving national alignment with key government partners to roll out a national communitybased approach to NCD care.

- We made strides in sustainability by conducting targeted trainings with counties and health system staff to help drive continuity of care and follow-up capacity. Our trainings elevated the ways in which health workers interact with and use data to inform clinical decision making and follow-up care.
- The Mwanga Access Program, a collaboration between Non-Communicable Diseases Alliance Kenya (NCD Alliance Kenya), ROCHE Diabetes Care, and Medtronic LABS, in partnership with the Meru County government, has screened over 18,000 people for diabetes and trained over 200 individuals in diabetes management since its launch in November 2022.
- We collaborated with stakeholders to align the national rollout of SPICE as a community-based NCD care approach, with existing digital health priorities, including aligning with eCHIS countylevel program entry, the national ICT policy, and implementing partners.

2023 Highlights

9 Counties

165 Facilities

Health System Partners

- Ministry of Health, Kenya
- Country & Local Governments

Funding Partners

- World Diabetes Foundation
- Novo Nordisk
- PATH
- Roche



Lives Improved

71,306



Health workers Trained

7,899 2023



People Screened

52,074

TOTAL **250,168**

26%



Patients Enrolled

19,404 2023

TOTAL **85,242**

29%



Active In Care

37,000

47%





Of HTN With BP in the Last 3 Months-Controlled



When Priscah Aondo was diagnosed with diabetes, she thought her life was over "I lost all my friends. People started talking about me. I was just waiting to die." the preschool teacher said.

In Kenya, where Aondo lives, the stigma associated with diabetes and hypertension can be crippling and <u>up to 60% of people with</u> chronic physical diseases including diabetes may have clinically significant levels of depressive symptoms – but 85% of the population lacks access to mental health services.

Support groups are one way this need is being met, but the care of the community health workers means a lot to patients like Aondo who can't attend the groups because of their jobs.

"My health worker Celestine encourages me when she comes," Aondo said. "She says, 'I'm here for you."

For Aondo, everything changed once she began to accept that she was living with diabetes – and that's what she wants to share with others living with the condition.

Since being enrolled in the Empower Health program, she has become a peer educator, going door to door to educate others living with diabetes and break down the stigma.

"I'm happy now," she said. "Now I have hope in life."

Priscah Aondo Kenya

DIABETES





SIERRA LEONE

Betteh Lyfe

We've expanded our reach in Sierra Leone and began building the first integrated model for community and primary care in the public and faith-based health systems, while moving into a sustainability phase with the Christian Health Association of Sierra Leone (CHASL). In partnership with the Bill & Melinda Gates Foundation and the Ministry of Health and Sanitation, Medtronic LABS is designing and implementing a SPICE-enabled primary health care model across an entire district to prepare for national scale. SPICE is poised for national adoption.

2023 Highlights

• 3 Districts

- 9 Facilities (scaling to 15 CHCs)
- Developed long-term sustainability model for value-based care in partnership with CHASL.
- Began partnership with the Bill and Melinda Gates Foundation to build the first integrated model for community and primary care.
- Partnered with Ministry of Health and District leadership to co-design and co-implement the first digitally enabled primary care model that will be used by 412 CHWs in 399 villages, linking all the way up to 15 Community Health Centers (CHCs).

Health System Partners

- Christian Health Association of Sierra Leone (CHASL)
- Ministry of Health and Sanitation

Funding & Thought Partners

- Sanofi Global Health Unit
- Bill & Melinda Gates Foundation



Active In Care

4,688



Health workers Trained

87



TOTAL 22,366

People Screened

12,079

*** 116**%

Patients Enrolled

3,333

TOTAL 10,788

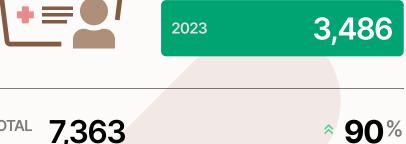
*** 44**%



Lives Improved

3,486

7,363





Of HTN With BP in the Last 3 Months-Controlled





GHANA

Akoma Pa

Akoma Pa has made big strides in managing non-communicable diseases (NCDs) in Ghana as we transitioned to the sustainability phase of the program. Through our partnership with Christian Health Association of Ghana (CHAG), we supported the enrollment of over 88,000 patients, focusing on providing affordable NCD screening and care to underserved communities. This year, we transitioned ownership of SPICE and community-focused screening and follow-up activities directly to CHAG and its facilities to continue the impact on patients for the long run.

We're continuing our design of the maternal health program we started in 2022 and deepening our relationships with Ministry of Health and Ghana Health Service partners as we dive into supporting the country's digital health journey.

2023 Highlights

• 9 Regions

• 91 Facilities

Health System Partners

- Christian Health Association of Ghana
- Ghana Health Service
- Ministry of Health, Ghana

Funding & Thought Partners

- GIZ, Federal Ministry of Economic Cooperation and Development, Germany (BMZ)
- Novo Nordisk
- KOICA



People Screened

11,362

30%

TOTAL 38,360



Patients Enrolled

11,727

TOTAL 88,371

15%



Active in Care

3,062

24,002 *** 15**%



Lives Improved

12,827

TOTAL **42,719**

43%



Health workers Trained

232 2023



Of HTN With BP in the Last 3 Months-Controlled





TANZANIA

Afya Imara

We're continuing to deepen our partnership with Christian Social Service Commission (CSSC) to implement our end-to-end NCD Program across 21 faith-based health facilities in 4 regions. We've already improved access to care for over 74,000 people, enrolling more than 19,000 hypertension and diabetes patients in quality longitudinal care. We trained facility staff on continued use of SPICE as we work toward sustainability of the program. With the positive impact of our "Afya Imara" program, Medtronic LABS aims to team up with the Ministry of Health and other innovators to further enhance access to quality care for people living with NCDs in Tanzania, targeting public health facilities.

2023 Highlights

• 4 Regions

- 21 Facilities
- Continued long-term sustainability model for value-based care in partnership with CSSC.
- Enrolled 19,120 patients with proven clinical outcomes, presented at major academic forums in Tanzania.
- Demonstrated the potential for HIV and NCD integrated care approaches at the facility level and began building HIV workflows into SPICE.

Health System Partners

Christian Social Services Commission (CSSC)

Funding & Thought Partners

Sanofi Global Health Unit



Active In Care

8,330



Health workers Trained

40



TOTAL **74,388**

People Screened

15,096

2,166

Patients Enrolled

TOTAL 19,120

13%



Lives Improved

2,988

12,584

31%

25%



Of HTN With BP in the Last 3 Months-Controlled





RWANDA

Turambe

In 2023, we completed execution of our Turambe Program in Rwanda. The joint effort between the Ministry of Health, Rwanda Biomedical Center (RBC), and the Patrick J. McGovern Foundation came together to implement the National NCD Strategy. From the onset, the approach focused on longterm sustainability by involving the Ministry of Health (MoH) in the co-creation and implementation of the program within existing digital health and NCD frameworks. Medtronic LABS supported the integration of NCD screening and patient follow-up workflows within the OpenMRS-based government screening application called mUzima.

2023 Highlights

• In 2023, we exceeded our enrollment target, enrolling 21,252 underserved hypertension and diabetes patients using a community-based healthcare delivery model – with 44% of those patients achieving control.

Health System Partners

- Rwanda Biomedical Center (RBC)
- Ministry of Health, Rwanda

Funding & Thought Partners

Patrick J. McGovern Foundation



People Screened



Health workers Trained

6,063



Active in Care

7,476



Patients Enrolled

21,723



Lives Improved

4,882



Of HTN With BP in the Last 3 Months-Controlled



BANGLADESH

NCD 360 Care

Our work in Bangladesh is a true multi-stakeholder partnership with BRAC and the government of Bangladesh. Medtronic LABS is adapting the SPICE technology to Bangladesh, BRAC is supporting implementation, and the Ministry of Health and A2I are driving alignment with national strategies. With close partnership with the government, we aim for national scale in the coming years alongside additional partners.

2023 Highlights

- 2 Districts
- 200,000 patients

• 110 Facilities



People Screened



Health workers Trained

286



Active in Care

2,927



Patients Enrolled

10,086



Lives Improved





Of HTN With BP in the Last 3 Months-Controlled





NEW JERSEY, UNITED STATES

Healthy Neighbor

In 2023, Medtronic LABS launched Healthy Neighbor in partnership with Virtua Health to improve outcomes for patients living with hypertension and diabetes in Camden, New Jersey. Through this program, a team of community health workers and registered nurses provide integrated clinical and social care in the community. Together, we aim to develop a replicable model for community-based care that can be scaled across the U.S.

2023 Highlights

- Launched Healthy Neighbor and enrolled the first cohort of 100 patients.
- Deployed SPICE integrated with FindHelp's social resource navigation platform.
- Demonstrated the impact of integrated clinical and social care on chronic disease outcomes.

Health System Partners

- Virtua Health
- FindHelp
- Camden AHEC

Funding & Thought Partners

FindHelp



Health workers Trained

202

4



Active in Care

2023

39



Of HTN With BP in the Last 3 Months-Controlled



Community health worker Karen Fernandez sat next to Marietta Gonzalez after taking her blood pressure and blood sugar.

The 72-year-old broke down in tears. She's lonely, but she said, it's just part of aging.

Fernandez grabbed her hand and told her she's not alone.

"It meant a lot to both of us," Fernandez said. "When you walk into someone's home – when they open their doors to you and welcome you – you're doing a service for them, but there's more to it. In the moment she needed to be heard, I was there to offer comfort."

Karen Fernandez
NJ

DIABETES



2023



BHUTAN

Hear, Listen, and Speak

We launched the "Hear, Listen, and Speak" program in Bhutan to narrow the gap in ear care services for children by strengthening the ear care continuum across the country. The program aims to screen every child in Bhutan for hearing loss and related disabilities and has already screened over half of all Bhutanese schoolchildren since its inception.

2023 Highlights

• 9 Regions

Health System Partners

Royal Government of Bhutan

Private Sector

- UN Technology Bank for Least **Developed Countries**
- Medtronic LABS
- MedEL
- GN Resound
- Hear the World Foundation (HTWF).



People Screened

2023

76,763

TOTAL 1,317,726

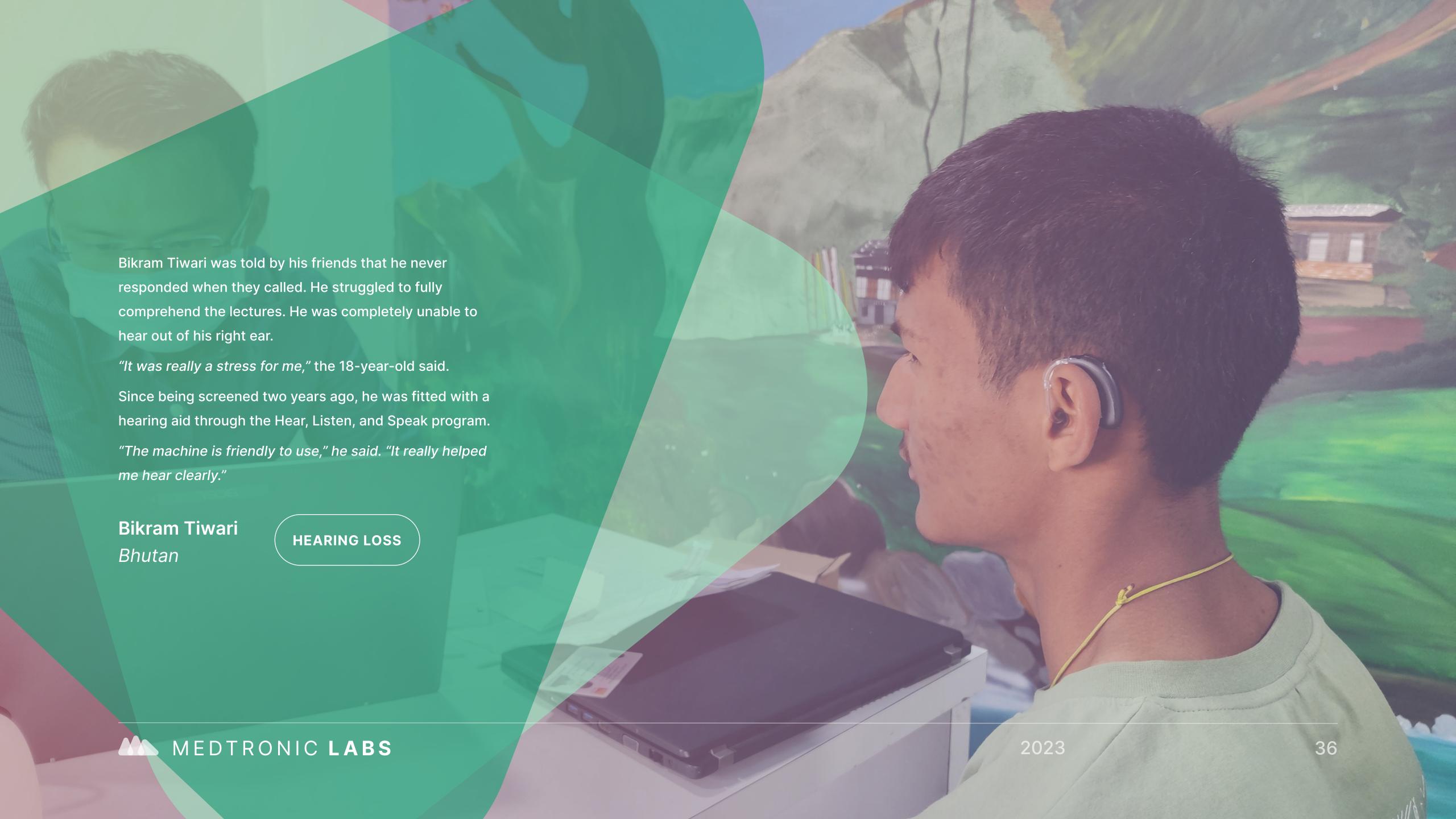
^ 15%



Lives Improved

2023

86%



What's next?

We are poised to make 2024 a year of unprecedented growth and impact. As we envision a new paradigm for community and primary care, we are fueled by the belief that every challenge is an opportunity for innovation and progress.

Our partnerships with governments are evolving, aiming not just for adoption but for full integration of our programs and technology into the fabric of healthcare systems worldwide.

What began as a Digital Public Good in SPICE is positioned to become recognized as a Global Good, amplifying our commitment to revolutionizing health systems for lasting change.

Our focus extends beyond expansion; we are dedicated to cultivating clinical excellence across diverse domains, empowered by the clinical intelligence enabled by SPICE.

This year, we'll continue to build clinical breadth in new areas, augmented with clinical intelligence that SPICE enables. Through this effort, we aim to launch new programs

focused on integrated care models, building interoperability standards like FHIR, supporting the development of WHO SMART guidelines, and applying machine learning and AI to specific use cases.

Recognizing the interconnectedness of global health and environmental sustainability, we are taking proactive steps to address the impacts of climate change on healthcare delivery. We're embracing this opportunity to lead the way in climate-resilient and proactive climate-adaptive care. In 2024, we're working with Ministries of Health to understand and mitigate the effects of climate change on population health by ingesting external datasets to construct a climate-health risk score for communities and facilities most vulnerable to climate impacts.

A steadfast dedication to improving outcomes for every individual and community we serve remains the heart of our mission. Together, let's embrace this moment of opportunity and chart a course towards a healthier, more resilient world.

Our Team

Our people are the bedrock of our impact. In 2023, we cultivated a diverse and skilled team that prioritizes cross functional collaboration over hierarchy. Our talented and dedicated teams, spread across the globe, work in tandem to achieve our collective mission. As we look to the year ahead, our focus on our people and their expertise will be the driving force behind our growth and continued success.



Total Employees



Employees live and work in the geographies we serve



Leadership positions are held by women

Meet our Talented Leadership Team



Ruchika Singhal

President

Anne Stake



Chief Strategy & Product Officer



Dr. Oren Ombiro **Chief Medical Officer**



Eric Angula Head of BD and Partnerships, Africa

Meet our Talented Leadership Team



Kelly Shelden
Head of Technology



Megha Kumar Head of Global Partnerships



Garima Sahai

Head of Global Implementation Excellence



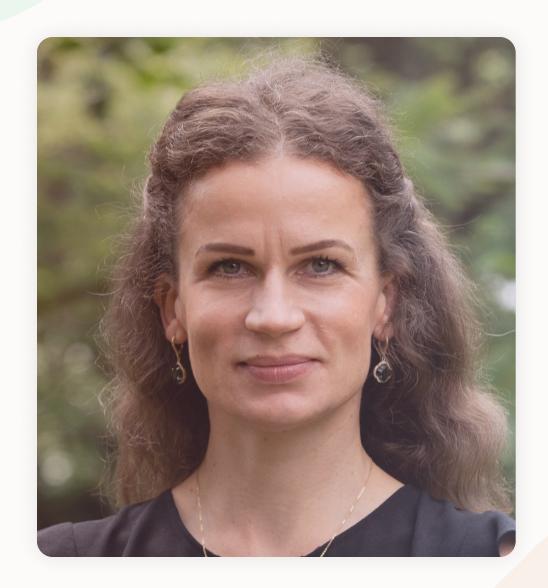
Jesse Njunguru

Head of Program Operations, Africa

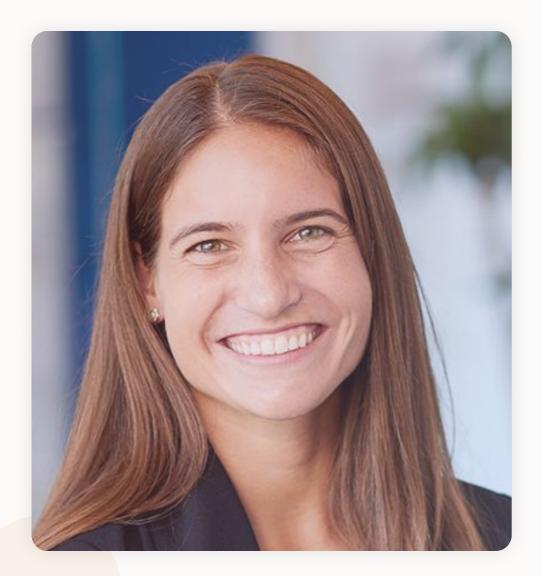
Meet our Talented Leadership Team



Vinay Hasija
Head of Design



Victoria Davis
Head of Finance



Lauren Leccese
Head of US Programs



Selvaganesan M

Product Manager



Global Health, Local Solutions