D-tree

OUR STRIDES TOWARD A HEALTHIER FUTURE

A YEAR IN REVIEW

2023

IN THIS REPORT...

ABOUT D-TREE

D-tree is a digital health organization working to expand access to high-quality, essential healthcare in sub-Saharan Africa, by enabling better decision-making at every stage of a person's health journey.

Founded in 2004 and with experts in public health and digital technology, we develop solutions that make health systems more personalized, accessible and coordinated. We partner with governments and like-minded organizations to improve the performance of health systems so that people receive the right care at the right place and time.

We are improving primary healthcare in Malawi, Tanzania, Zanzibar and Zambia. Our vision: a world where everyone, no matter where, has access to the healthcare they need to live longer, healthier lives.

Stay in touch with our work by following us on LinkedIn and X and sign up for our quarterly newsletter!

in /company/d-tree   **X** @DtreeInt   ✉ www.d-tree.org

A LETTER FROM OUR CEO

2023 ended with a historical milestone: the President of Zanzibar announced the institutionalization of **Jamii ni Afya**, the community health program that D-tree has supported since 2010. With resounding commitment, the government will improve the conditions for community health workers, including adequate remuneration and training so they can provide comprehensive health services at the doorstep of every Zanzibari household.

This achievement represents a significant step toward a healthier future. The foundation of good health starts in people's homes: the "first" mile of health and well-being. The tireless efforts of community health workers pave the way for healthier, happier lives and societies.

In 2023, D-tree continued to support primary healthcare in Zambia, Malawi and Tanzania by leveraging digital technology. I am proud that our work has contributed to over **640,000 health visits in 2023, which is a 15% increase from 2022**: more mothers, children and their families now benefit from quality healthcare.

Internally, we have continued to live our **organizational values**. One of our core values is diversity and last year, we increasingly included diverse voices and lived experiences in our decision-making. We are proud that our Board is composed of 40% Africans and 60% women. We are continuing to improve diversity across the organization, including in leadership roles.

Looking ahead, 2024 marks D-tree's 20th anniversary. In celebrating this milestone, we carefully assessed avenues to accelerate impact and refined our approach. **While we keep strengthening health service provision at the community level, we recognize that it is equally important to improve quality in health facilities.** People need different health services throughout their life and we will aim at improving health services and connecting and coordinating providers in a people-centered way. This will enable better decision-making and care provision throughout the health system and ultimately save lives.

Witnessing D-tree's 2023 results and planning for our future makes me proud, hopeful and even more committed to our cause. I am grateful to all of you who joined us to enhance access to quality healthcare for all. Thank you.

Riccardo Lampariello
CEO

THE CHALLENGE: POOR ACCESS TO QUALITY HEALTHCARE

Millions of people die every year because they don't get the quality care they need, when and where they need it.

287,000 women worldwide die every year as a result of their pregnancy. 6.9 million under-five children die, of which about 3 million are newborns. Most of these deaths occur in sub-Saharan Africa.

43 in 1,000 children die before the age of five in Tanzania

39 in 1,000 babies die in their first month of life in Zambia

Malawi has an average life expectancy of only 61 years

In many low- and middle-income countries, health systems are fragmented and not centered around the needs of the people they serve, leaving many without sufficient access to essential healthcare. This is one of the biggest injustices the world is facing today. D-tree works to change that.

A YEAR OF MAKING A DIFFERENCE

WHAT WE'VE ACHIEVED

2 million
people's health and well-being improved so far as a result of our work

in 2023

410,499
people were served by health workers* supported by D-tree

643,417
health visits completed

3,601
health workers* were supported by D-tree

* community health workers, health facility providers and drug shop dispensers

IMPROVING CARE FOR EVERYONE

We improve delivery of timely and quality care by introducing innovative tools for health workers across the system – from the community health worker to the health facility and drug shop. By expanding, training and equipping these key health providers we prepare systems to deliver quality care for all.

In 2023, we strengthened **Afya-Tek**, our flagship program in Tanzania improving maternal, child and adolescent health. The program connects patients to community health workers, drug shops and health facilities, ensuring timely and personalized care. The system is unique for its inclusion of private sector drug shops – a convenient and frequently utilized community access point accessed by over 70% of the rural population. **In 2023, Afya-Tek reached nearly 500 healthcare providers and 237,000 registered users**, showing how successful this approach is in providing healthcare to those who might not go to health clinics or are reached by community health workers. 90% of patients are successfully followed up in health clinics for further care, which is three times higher than other health programs.

The digitally-enabled community health program **Jamii ni Afya**, supported by D-tree, continues to serve nearly every household in Zanzibar. In 2023, we worked with the Ministry of Health and leading early childhood development experts, to make early childhood development services available to all Zanzibaris as we expanded the community health workers' service delivery package, based on the World Health Organization's and Unicef's Nurturing Care Framework and adapted from Care for Child Development. **As community health workers visit people's homes, they now have the tools they need to observe caregiver-child interactions**

and look for concerns such as harsh discipline, lack of play materials, health and nutrition or unsafe environments. Community health workers also coach caregivers on age-appropriate play and communication. In 2023, we partnered with the Ministry of Health to expand and improve how these services are delivered, so that more children can reach their full potential in Zanzibar:

Improvements to community health worker training and supervision approaches, including emphasizing community health workers' practical skills in coaching on early childhood development and incorporating videos into training sessions to demonstrate behaviors.

Community health workers have increasingly engaged fathers in caring for children, leading to more meaningful relationships between children and their fathers.

Improved guidance for children with disabilities so that those children needing support the most can thrive.

In Malawi, we have improved how HIV services are delivered in the community and at the health facilities. Alongside partners, we have designed, developed and piloted a digital solution supporting community health workers in providing people-centered HIV care. **Community health workers will be better equipped to support people with HIV to routinely attend their health visits and stay healthy throughout their lives** and also contribute to reducing new number of HIV cases. We are now focused on scaling the tool to help Malawi reach its 95-95-95 targets and ensure all people living with HIV get the support they need to lead healthy lives.

MAKING A LASTING IMPACT, TODAY AND FOR THE FUTURE

We build strong data-driven health systems that deliver quality care for all. We co-design our programs with governments while helping them build the necessary skills to take full technical, operational and financial ownership over the long term to achieve impact that last.

When Jamii ni Afya reached national scale in 2021, it transformed the Zanzibari health system and helped ensure that every family has access to high-quality care at its doorstep. In 2023, we reached a new milestone as we started to prepare the Revolutionary Government of Zanzibar to take full ownership of Jamii ni Afya. The commitment was solidified through the **Jamii ni Afya Transition Plan**, with 15% of operating costs already allocated in the 2023–2024 national budget. Political will is important for

sustainable change, and in December 2023, the President and the Minister of Health publicly declared themselves as champions of the program, bringing Jamii ni Afya into the national spotlight and affirming Zanzibar's commitment at the highest levels.

Throughout Jamii ni Afya, we have learned a lot about how to successfully transform digital health systems, and last year we published a **report in JMIR** capturing our journey, including the many valuable lessons that other implementers can draw from when working on strengthening digital health systems across the world.

In Tanzania, D-tree partnered with the Government of Tanzania and others to build and implement the Ministry of Health's national digital community health system. This high-quality and data-driven system will improve community health service delivery and expand access to quality care at health facilities. In 2023, D-tree integrated early child development services, adapted from Jamii ni Afya into the system making these services available to more Tanzanians than ever before. We also received government approval to bring Afya-Tek into this system, as the government values how Afya-Tek connects private-sector drug shops with public health services and improves data visibility and sharing across the entire health system. This national digital community health system has the potential to reach over 40 million people with quality healthcare, so more people than ever can live happier and healthier lives in Tanzania.

In 2023 we also strengthened national health systems in Malawi and Zambia. In Malawi, we collaborated with partners to realize the government's vision for a national digital system that will guide community health workers in delivering diverse health services, while also making the resulting

data available at the community, district, and national levels. In Zambia, we entered a new partnership to support the Ministry of Health to show what the updated national community health system could look like

as D-tree is designing and developing digital tools to support Zambia's community health workers to provide high-quality, patient-centered health services.

As we are moving into 2024, we are continuing this transition by…

Finding ways to improve the financial stability of the health system in Zanzibar by linking Jamii ni Afya to ongoing government efforts such as universal health insurance

Training the government and creating systems to manage the operational and technical components of the program with support from other organizations.

RIGHT CARE Trained health workers with digital tools improve diagnostic accuracy, and the availability of full data enables tailored health services, ensuring everyone receives the care they need.

RIGHT PLACE We connect the dots between community health workers, health facilities, and people. Care is delivered at the right level of the health system and is accessible to all people, wherever they are.
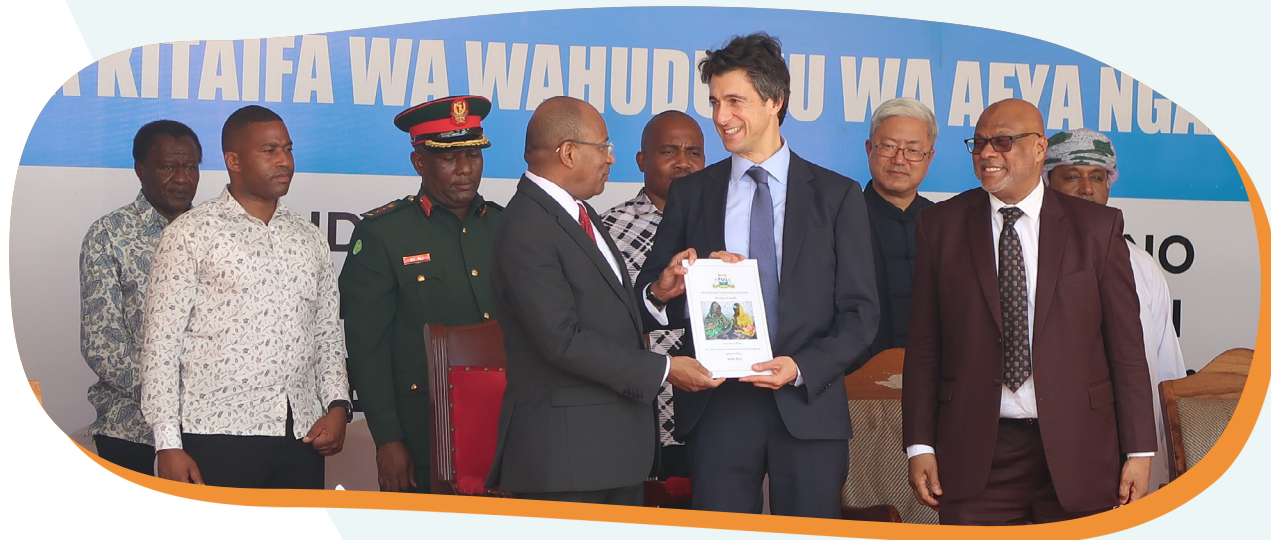
RIGHT TIME By delivering preventive and curative care when it's needed, we improve wellbeing and save lives.

COMMUNITY HEALTH WORKERS

PEOPLE

HEALTH FACILITIES

CARE

FROM VOLUNTEERS TO WORKERS

Major steps toward professionalization of the community health workforce in Zanzibar

Last year marked a historic milestone for Jamii ni Afya and the Revolutionary Government of Zanzibar who announced the transition of their national cadre of community health workers from community health volunteers to professional and salaried community health workers. This shift represents a profound step toward enhancing the impact and recognition of these vital contributors to the health sector.

We know that community health workers who are salaried, skilled, supervised and supplied have the potential to save millions of lives and we were proud to see the Revolutionary Government of Zanzibar taking big steps toward this last year. In December, the Ministry of Health upgraded Zanzibar's community health volunteers to community health workers, recognizing them as professionals and acknowledging their essential contributions to the health system. This milestone was celebrated at an event in December last year, bringing together community health workers from across the islands of Zanzibar, development organizations, and government ministries.

> " WE LOOK FORWARD TO BEING A LEADING COUNTRY IN THE REGION, AND PROBABLY IN THE WORLD IN THE IMPLEMENTATION OF UNIVERSAL HEALTH COVERAGE BY ENSURING PEOPLE GET ACCESS TO THE BEST HEALTH SERVICES THROUGH DIGITALIZATION. LET ALL PEOPLE AND PUBLIC SERVANTS INVOLVED SHOW COMMITMENT IN THE ENDEAVOR. "
>
> **Hon. Hassan Mwinyi, President of Zanzibar**

THE COMMITMENT

Jamii ni Afya community health volunteers will be officially called community health workers, recognizing their contribution to the Zanzibar health system as public health professionals.

The community health workers will become part of Zanzibar's national health system as an official workforce cadre.

The government will raise and commit domestic funds to sponsor the costs of the Jamii ni Afya program.

Community health workers will receive a compensation that is three times greater than their current stipend. The government will continue to utilize a pay-for-performance system to enhance community health workers accountability and commitment.

Community health workers will provide expanded services to households and communities, including simple curative and diagnostic services. Community health worker training will be strengthened to accommodate the added skills and knowledge needed.

We are proud to have worked hand-in-hand with the government to reach this milestone and will continue to build on this success in 2024 and beyond.

COMMUNITY HEALTH IMPACT COALITION

D-tree is a member of **Community Health Impact Coalition** (CHIC), a coalition including thousands of community health workers and dozens of health organizations in 60+ countries. Together, we are making professional community health workers the norm worldwide by influencing guidelines, funding, and policy. In 2023, we supported the proCHW movement with advocacy at the 76th World Health Assembly, where the Zanzibar Minister of Health, representing both Zanzibar and Tanzania, called for the transition of community health volunteers to professional workers. D-tree's engagement extends to national-level CHIC coalitions, such as in Malawi, where we contribute to advancing professional community health worker policies and practices.

INNOVATING WITH A PURPOSE FOR THE PEOPLE WHO NEED IT THE MOST

Increasing access to high-quality healthcare requires a sustainable approach to innovation. We develop context-specific solutions that are designed to be integrated into existing health systems and respond to the highest needs in the country.

In 2023, we continued to explore how artificial intelligence can improve the health and well-being of people, focusing on chatbot technologies and predictive models. Together with experts we prototyped innovative solutions for community health workers and experimented in making ChatGPT accessible for health education and promotion related to HIV. All of this helped us understand the potential and limitations of making similar services available in local languages.

We fostered discussions with other experts on the ethical use of artificial intelligence in development. At the Global Digital Health Forum, we co-facilitated a workshop on **implementing artificial intelligence in Low-Resource Healthcare Settings**. We also published a paper exploring how to create **fair compensation schemes for community health workers** using artificial intelligence.

Our first innovation strategy

This will guide us on how to harness innovation for maximum impact.

Examples of this in practice:

———————————

A chatbot with a local partner in Zambia

———————————

A prototype of a digital payment system for community health workers in Zanzibar

———————————

Design of a direct-to-client solution for Zanzibari mothers, based on the MomConnect platform to be integrated into the national community health system, Jamii ni Afya.

Finally, our engagement with the Fast Healthcare Interoperability Resources (FHIR) in Malawi has positioned us at the forefront of digital health system integration. Insights from this work have strengthened our contributions to the FHIR ecosystem and by collaborating with industry leaders, we are improving its accessibility and effectiveness globally. Our participation in global discussions, including those at the 2023 Global Digital Health Forum, underscores our commitment to leveraging FHIR for smarter, more integrated and impactful health solutions.

USING DATA TO MAKE BETTER DECISIONS FOR CARE

We work with governments and partners to build capacity for high-impact and ethical use of data to support better decisions that improve care, from the national level to day-to-day service delivery. We strengthen data governance to make data accessible to those who can use it to improve patients' lives while also respecting patients' right to privacy.

In Zanzibar, we collaborated with the government to develop and disseminate policies, guidelines and standards for improved data management and governance within the health system. Our efforts have focused on supporting government stakeholders to improve their use of data for operational decision-making, analysis and research while safeguarding the privacy and safety of patients. These guidelines were approved by the government and will officially be integrated into the health system, alongside training, throughout 2024. In Tanzania, we strengthened the Ministry of Health's ICT unit's skills around data management and use. **Responsible management of data is key as we foster government partners' ability to maintain, implement, and utilize data** from our programs that are now integrated into Tanzania's national unified community system.

To further accelerate best-in-class data governance in Tanzania and Zanzibar, we facilitated a **government learning exchange** between Kenya and Zanzibar, where the respective Ministries of Health met to discuss best practices, challenges, and learnings around data governance and digital health. These types of peer-to-peer exchanges are invaluable to avoid reinventing the wheel by building on progress already made.

At the district level in Tanzania and Zanzibar, we've standardized data review processes and trained health management teams on data utilization. We've also provided training for community health workers to understand the importance of quality data collection for improved patient care. Furthermore, we're exploring how to improve consent processes for health data use to empower patients and ensure accountability.

Additionally, we have continued to contribute to global advocacy by supporting **Transform Health Coalition**'s efforts to develop a global policy framework for data governance and supported their advocacy efforts to increase investment and action for digital health transformation more broadly.

WORKING TOGETHER

We are locally-led and globally connected. We combine deep partnerships with government and national actors in the countries where we work, with leading expertise and partnerships in global health. None of the impact we have had in 2023 would have been possible without the generous support of our partners and donors.

GOVERNMENT PARTNERS

Malawi Ministry of Health, Tanzania Ministry of Community Development, Gender, Women and Special Groups, Tanzania Ministry of Health, Tanzania Pharmacy Council, Tanzania President's Office-Regional Administration and Local Government, Zambia Ministry of Health, Zanzibar Ministry of Community Development, Gender, Elders and Children, Zanzibar Ministry of Health, Zanzibar Second Vice President's Office.

IMPLEMENTING PARTNERS

Apotheker, Aspen Management Partnership for Health, EDI Global, Evangelical Lutheran Church of Tanzania, Google.org, IHM Africa – Southern Africa, Last Mile Health, Medic, Mothers2Mothers, ONA, On Call Africa, Pact, PATH, Reach Digital Health, Tackle, Unicef, University of Malawi, Young Women's Christian Association, WAJAMAMA, Zanzibar Research Centre for Socio-Economic and Policy Analysis, PharmAccess, Dimagi.

DONORS

Bill & Melinda Gates Foundation, British Academy, Conrad N. Hilton Foundation, Copper Rose Zambia, Crown Family Philanthropies, FAIR/NHH, Fondation Botnar, GDI Solutions, LLC (Agency Fund), James Percy Foundation, Norwegian Research Council, European Research Council, PATH, Patrick J. McGovern Foundation, Stockholm University (with funding from the Swedish Research Council and UKAID).

USAID PARTNERS

Amref Health Africa (USAID Malawi MOMENTUM, Tikweze Umoyo Project), Baylor College of Medicine Children's Foundation – Malawi (USAID-Malawi, Centre for Infectious Disease and Research in Zambia (USAID Controlling HIV Epidemic for Key and Underserved Populations (CHEKUP) I Project), Client-Oriented Response for HIV Epidemic Control (CORE) Activity Component Two (2)), Elizabeth Glaser Pediatric AIDS Foundation (through the U.S. President's Emergency Plan for AIDS Relief, through the United States Agency for International Development (USAID) under the USAID Afya Yangu Northern Contract No.: 72062122C00001, Jhpiego (USAID Afya Yangu RMNCAH).

We are always looking for like-minded partners to work with us. If you are interested in collaborating, get in touch at **partnerships@d-tree.org**.

WHAT'S NEXT?

With a commitment to our vision of a world where everyone, no matter where, has access to the healthcare they need to live longer, healthier lives, we will continue to apply global digital health best practices and innovative solutions to our work in Tanzania, Zanzibar, Malawi and Zambia, with a focus on the people who need it the most.

We have defined the next stage in people-centered health, which is going beyond health silos at community or facility level, to think about *continuous, well-coordinated and quality care across service delivery points and throughout a patient's healthcare journey*. We will focus on leveraging the best of artificial intelligence and innovation to enable this digital continuum of care where we work, ensuring that everyone receives the right care, at the right place and right time, as they navigate through different levels of the health system.

All of this has to be done in co-creation with governments, while fostering the policies, systems, financing, and leadership required to sustain impact.

In 2023, we also focused on improving our organizational effectiveness, impact measurement, and building a sustainable financial foundation. We will continue to build on this in 2024, and beyond.

▶ **Defining programmatic impact.**
We embarked on a journey to redefine our approach. We looked at the underlying assumptions, pathways and interventions needed to bring about the change we want to see in the world. Accompanying this, we began to define the core programmatic indicators that will be used to measure the impact of our programs.

▶ **Improving financial sustainability.**
We have developed a plan to shift D-tree's financial revenue from largely restricted, programmatic funding to more flexible funding to allow us to replicate and scale our model of people-centered health systems.

▶ **Strengthening organizational results-based management.**
We have improved our internal systems for performance management and staff development, as well as established a dashboard for key performance indicators that will enable us to steer the success of the organization.

2024 marks D-tree's 20th anniversary and from now, we will be fully embracing our refined approach so that we can accelerate change for those who need it the most and save lives in the countries we work in.

WHAT CHANGE DO YOU WANT TO SEE FOR HEALTH IN 2024?

We believe every person has the fundamental right to health and happiness. That is why we keep compassion and care at the core of what we do and ensure we are always guided by the people we work with and for.

"DUE TO THE INCREASING NUMBER OF NON-COMMUNICABLE DISEASES AND ANEMIA CASES AMONG PREGNANT WOMEN IN ZANZIBAR, I HOPE THAT IN THE YEAR 2024, I WILL WITNESS COMMUNITY HEALTH WORKERS FOCUSING MORE ON THOSE ISSUES AND EXPANDING THEIR SERVICES WITHIN THE COMMUNITY BY PROVIDING EDUCATION ON NON-COMMUNICABLE DISEASES SUCH AS DIABETES, HYPERTENSION, AND HEART DISEASES."

Fadhila Ramadhan Khatibu, Jamii ni Afya client, Zanzibar

"I ENVISION A TRANSFORMATIVE SHIFT IN RURAL HEALTH, WHERE ACCESSIBILITY AND QUALITY CONVERGE. THROUGH INNOVATIVE INITIATIVES AND COMMUNITY-DRIVEN INTERVENTIONS THAT AIM TO BRIDGE THE GAP IN HEALTHCARE DISPARITY, EMPOWERING LOCAL HEALTHCARE PROVIDERS WITH RESOURCES AND TRAINING TO ENSURE EQUITABLE CARE DELIVERY, FOSTERING HEALTHIER AND MORE RESILIENT RURAL COMMUNITIES."

Steven Miti, Project Officer, On Call Africa

"I WANT COMMUNITY HEALTH WORKERS TO BE COMPREHENSIVELY SUPPORTED, AND SPECIFICALLY WITH DIGITAL TOOLS THAT CAN IMPROVE ADHERENCE TO SET PROTOCOLS, DATA CAPTURING AND REPORTING."

Chimango Munthali, D-tree Malawi Country Director

"I FIRMLY BELIEVE THAT RESPONSIBLE AI IMPLEMENTATION HAS THE POTENTIAL TO BRING ABOUT A TRANSFORMATIVE CHANGE IN HEALTH, LEADING TO BETTER HEALTH OUTCOMES FOR ALL, AND THAT IS WHAT I AM HOPING TO SEE MORE OF IN 2024."

Debbie Rogers, CEO Reach Digital Health

"IT IS A CRITICAL MOMENT FOR TECHNOLOGY TO BETTER RESPOND TO THE EXISTING GAPS IN QUALITY PRIMARY HEALTHCARE; WITH INCREASED MOMENTUM IN THE DEVELOPMENT OF DIGITAL AND AI, WE CAN SEIZE OPPORTUNITIES TO MAKE PRIMARY HEALTHCARE MORE ACCESSIBLE, TIMELY AND EFFECTIVE. BY LEVERAGING TECHNOLOGY SUCH AS WITH AFYA-TEK, WE ARE PROUD TO SEE THESE OPPORTUNITIES BEING HARNESSED TO ADDRESS HEALTHCARE DISPARITIES AND SUPPORT A HEALTHIER FUTURE FOR THE NEXT GENERATION AND BEYOND."

Siddhartha Jha, AI and Digital Innovation Lead, Fondation Botnar

"I WANT TO SEE AN INCREASE IN THE AVAILABILITY OF HEALTH WORKER AND MEDICINES. I WANT HEALTH WORKERS TO BE ABLE TO SERVE THE COMMUNITY AT LARGE AND WHEN A PREGNANT WOMAN ARRIVES AT THE HEALTH CENTER, SHE SHOULD BE TREATED QUICKLY."

Amuko Abdallah, community health worker, Afya-Tek, Tanzania

"IT IS INCREDIBLE TO SEE THE IMPACT THAT D-TREE, AS PART OF THE COMMUNITY HEALTH TOOLKIT COMMUNITY, IS HAVING INDEPENDENTLY LEADING PROGRAMS THAT POWER COMMUNITY HEALTH WORKERS WITH DIGITAL TECHNOLOGY. TOGETHER WITH D-TREE, MEDIC PROTOTYPED EFFICIENT DIGITAL PAYMENTS. IN 2024, WE AIM TO CONTINUE THIS COLLABORATION TO EMPOWER PROFESSIONAL COMMUNITY HEALTH WORKERS WHO ARE PAID, TRAINED, SUPERVISED, AND SUPPLIED."
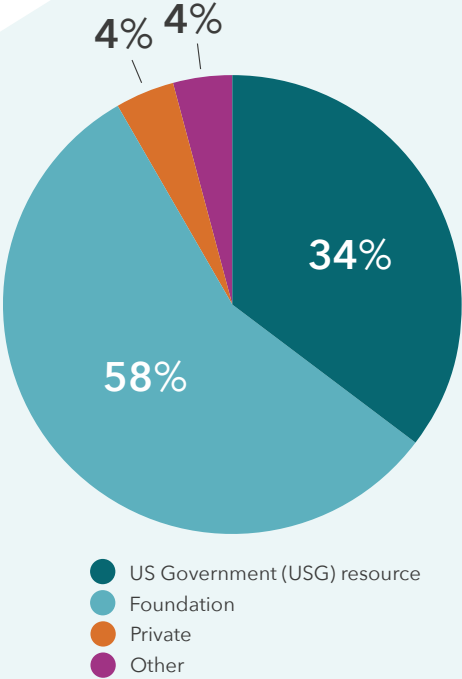
Dr. Krishna Jafa, Chief Executive Officer, Medic
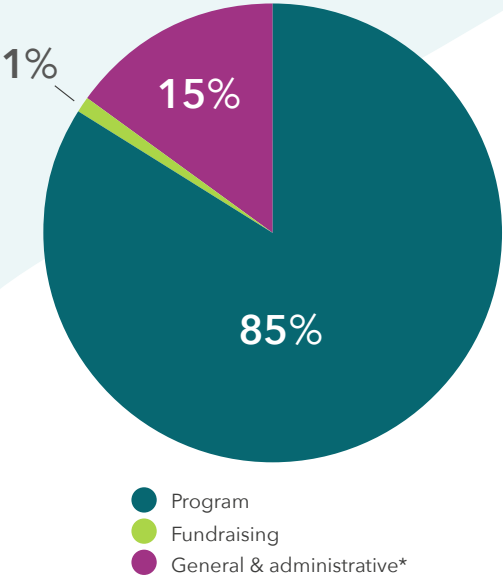
FINANCIAL STATEMENT

REVENUE BY SOURCE 2023

US Government (USG) Resource	1,928,860.12
Foundation	3,320,816.68
Private	247,539.19
Other	251,134.80
TOTAL REVENUE	**$ 5,748,351**

4% 4%

34%

58%

- US Government (USG) resource
- Foundation
- Private
- Other

EXPENSES 2023

Program	4,685,862
Fundraising	47,833
General and administrative*	836,364
TOTAL EXPENSES	**$ 5,570,060**

1%

15%

85%

- Program
- Fundraising
- General & administrative*

* General and administrative (or overhead) funding allows D-tree to be financially resilient and ensure robust financial, human resource and grants management systems and structures are in place that enable high quality programming. Help us break the myth that funds not going to 'programs' are not well spent. Unrestricted funds and overhead are essential to health of a well-run non-profits.