FII INSTITUTE
Future Investment Initiative Institute
Impact on Humanity

SCALING INNOVATION TO MAXIMIZE GLOBAL HEALTH IMPACT

Priority Champions

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THE GLOBAL FUND

EXECUTIVE SUMMARY

PREVENTABLE AND TREATABLE INFECTIOUS diseases continue to take a staggering toll on the world. In 2023, for example, 1.25 million people died from tuberculosis (TB), and malaria claimed another 600,000 lives – nearly three-quarters of whom were children under the age of five. These deaths are a stark reminder of the deep inequities that leave the most vulnerable exposed to preventable illness and death.

Two decades ago, beating back TB and malaria seemed an almost impossible dream. The diseases were ravaging communities across the world, taking a huge toll on lives and societies. The world has come an extraordinarily long way, witnessing great leaps in the fight against these diseases. Between 2002 and 2022, TB deaths were reduced by 36% and malaria deaths by 28% in more than 100 countries where the Global Fund invests. Without effective disease control measures, those deaths would have increased by 129% for TB and 90% for malaria. However, this work is not yet complete; now is a crucial moment in the battle against these deadly diseases.

The challenge is intensifying. Malaria parasites and the mosquitoes that carry them are increasingly resistant to antimalarial drugs and insecticides, complicating elimination efforts that once seemed within reach. To make matters worse, rising temperatures are expanding the territories in which these mosquitoes can thrive, bringing malaria to new areas. The battle with these diseases is not just one of science, but also one of global infrastructure, stability and environmental stewardship.

The world is racing toward a future of economic growth and technological advancement. But humanity's progress is hindered when the poorest and most vulnerable continue to bear the brunt of preventable deaths. The tools exist to change this trajectory, but to end these diseases for good, there must be a collective will to act.

This is where global health organizations like the Global Fund and UNICEF play a crucial role – bridging the gap between innovation and impact. Their task is not only to fund or procure new tools, but also to ensure these tools reach people who need them the most and are effectively integrated into health systems. Whether scaling well-established interventions or deploying cutting-edge innovations, their role is to convert advancements in science and technology into lifesaving tools for all.

INTRODUCTION

PREVENTABLE AND TREATABLE INFECTIOUS diseases continue to take a staggering toll on the world, devastating communities and holding back countries' economic development. In 2023, for example, 1.25 million people died of tuberculosis while malaria killed another 600,000, over 95% in Africa, and 76% of whom were children under the age of five. TB and malaria are co-endemic in at least 19 countries,[1] and co-infection is believed to be frequent, with a high risk of poor outcomes due to the interplay among infection, malnutrition and severe disease.

Both diseases have affected humanity for centuries. Like other infectious diseases, they constantly evolve. They mutate and develop resistance to existing treatments. They thrive in areas where conflict destroys health systems and disrupts response capacities, and spread to new areas as climate change alters weather patterns. Malaria parasites and the mosquito species that carry them have developed resistance to several antimalaria drugs and insecticides, and rising temperatures are expanding the habitats of malaria-carrying mosquitos to new areas and populations not previously affected. Malaria-carrying mosquitoes are increasingly spreading to African urban areas, challenging control efforts traditionally focused on rural settings. Extreme weather events also disrupt prevention and treatment programs, making elimination efforts even more challenging.

The Covid-19 pandemic clearly demonstrated the unpredictability of infectious diseases. In a matter of months, a novel pathogen spread globally, overwhelming health systems, causing widespread illness and death and bringing the global economy to a halt. Over the course of the pandemic, the coronavirus continued to evolve, causing new waves of infections and forcing everyone involved in fighting it – from communities and governments to healthcare workers and scientists developing new drugs and tools – to remain flexible and adjust their strategies constantly.

PHOTO: FII

1 OF 36 MALARIA MODERATE TO HIGH TRANSMISSION COUNTRIES AND THE GLOBAL TB 'WATCHLIST'.

INNOVATION IS THE KEY

Yet, the experience of the pandemic and the lessons learned in the fight against TB and malaria also demonstrate that with the right investments and relentless persistence, we can defeat even the deadliest pathogens. The fight against infectious diseases must continue until it is won. If left unchecked, these diseases can quickly resurge, as evidenced by malaria in recent years. While treating infections is critical to saving lives, it must be paired with interventions aimed at prevention and reducing vulnerability, ranging from investing in primary healthcare and maternal and child health to improving nutrition and disease detection and surveillance. Ultimately, harnessing human creativity and innovation to develop new drugs, new technologies and approaches opens up opportunities for significant advancements. Innovation is a crucial asset in the fight against infectious diseases. Scientific breakthroughs alongside political and regulatory changes have led to more efficient diagnostics and more effective treatments, as well as better financing mechanisms. They have also resulted in more successful preventive measures that include both high-tech tools and social and behavioral changes. With recent advances in biotechnology and the emergence of artificial intelligence (AI), the world is on the cusp of a new wave of promising innovations that can help save millions of lives and spur social and economic development.

However, innovation alone is not enough. To truly make an impact, innovations must reach the communities that need them most. To make a real impact, innovations must be scaled, made affordable and supported by systems that enable effective implementation. This involves addressing pricing and financing challenges, as well as building the capacity of people and the health systems in which they operate to use and benefit from new solutions.

But even the most promising innovation cannot achieve scale without the right partnerships, systems and country leadership to support its uptake.

PHOTO: UNICEF

PHOTO: UNICEF

LOCAL AND INTERNATIONAL: THE GLOBAL HEALTH ECOSYSTEM TO SCALE INNOVATION

Fighting infectious diseases and building strong, resilient and sustainable health and community systems require local leadership. When countries take the lead in tailoring solutions to their specific requirements and contexts, the impact is greater. Indeed, while international headlines often highlight health innovations from places like Silicon Valley or leading pharmaceutical and biotechnology companies, countries around the world are increasingly investing in and developing their own health innovation ecosystems.

Nevertheless, the challenge of ensuring equitable access to lifesaving tools and innovations remains significant. Diseases such as TB and malaria, and many other infectious diseases, are mostly under control in rich countries, while they continue to kill many in low- and middle-income countries (LMICs). This is where global health organizations like the Global Fund and UNICEF play a crucial role – bridging the gap between innovation and impact. Their task is not only to fund or procure new tools, but to ensure these tools reach the people who need them most and are effectively integrated into health systems. Whether scaling well-established interventions or deploying cutting-edge innovations, their role is to convert advancements in science and technology into lifesaving tools for all.

Present in over 190 countries, UNICEF focuses on maternal and child health, nutrition, immunization and primary healthcare (PHC), ensuring lifesaving health innovations reach the most vulnerable populations. In malaria and child survival, UNICEF supports the integrated management of malaria and other childhood infections, strengthens health system capabilities by improving data quality and use, enhances supply chains and community systems, and drives transformative social behavior change. UNICEF also plays a key role in emergency malaria response and expanding access to preventive interventions, including insecticide-treated nets (ITNs), chemoprevention and the malaria vaccine rollout. Through the UNICEF Supply Division's market-shaping strategies, the organization has worked to reduce costs and expand access to essential health technologies. The Global Fund – the largest multilateral funder of programs to fight HIV, TB and malaria – invests over US$5 billion annually in health interventions, significantly impacting global health outcomes. Beyond direct disease control, the Global Fund has played a crucial role in strengthening health systems by funding essential health infrastructure, diagnostic networks and workforce training in LMICs. By partnering with governments, the private sector and civil society, both organizations drive scalable, sustainable and locally owned health innovations.

MOBILE X-RAY MACHINES

An illustrative example of how the deployment of health innovations works is the fight against TB in Iraq. Iraq bears the highest TB burden in the Middle East and North Africa region, which has been exacerbated by decades of conflict and instability. Vital infrastructure like hospitals, clinics and labs have been damaged or destroyed, doctors and other health workers have fled the country and disease has rapidly spread. Diagnosing TB in such settings is challenging, due to a shortage of trained radiographers and limited access to diagnostic equipment. To address this, the Global Fund, working in partnership with the International Organization for Migration, has invested in mobile X-ray machines equipped with AI-powered software for rapid TB screening and diagnosis. In places like Mosul, for example, where patients once had to wait up to three months for a diagnosis, they can now get an answer in minutes and begin treatment immediately, reducing the risk of passing on the infection to others. This approach not only enables Iraq to drive back its TB burden but also strengthens the country's overall health system. Embedding TB services, including case detection and treatment initiation, in routine primary care reduces the reliance on centralized facilities, improves treatment outcomes and ultimately ensures sustainability. The Global Fund is investing in similar programs in countries around the world, helping to significantly reduce the number of undetected cases of TB, one of the critical preconditions for eventually eliminating the disease as a public health threat everywhere.

UNICEF has also supported efforts in Ghana and Côte d'Ivoire to expand access to diagnostics at the primary care level. This includes integrating X-ray results for TB diagnosis in Ghana and piloting integrated sample transport for HIV, TB and cervical cancer in Côte d'Ivoire, showing how diagnostic innovations can strengthen health systems and improve early detection and care.

PHOTO: UNICEF

LIFESAVING MEDICAL OXYGEN

Another example is the role the Global Fund and UNICEF have played in expanding access to medical oxygen in LMICs, helping to integrate oxygen production and therapy into primary healthcare facilities through innovative and scalable solutions. Some 60% of the world's population – particularly in LMICs – do not have access to affordable, quality medical oxygen services, with the access gap disproportionately higher at PHC levels. Since 2021, the Global Fund has become one of the world's largest funders of medical oxygen, investing US$564 million in medical oxygen production facilities and related services across 88 countries. At the same time, UNICEF, by leveraging cutting-edge technologies such as solar-powered oxygen concentrators and providing targeted training for primary healthcare providers in hypoxemia management, has helped to redefine oxygen therapy, transitioning it from a hospital-centric intervention to a standard, accessible component of primary care.

Medical oxygen is critical not only for newborn and pediatric care but also for the management of severe malaria and tuberculosis (TB). It plays a vital role in treating severe cases, particularly in children and immunocompromised individuals, by managing respiratory complications associated with these diseases and ensuring better survival rates and improved health outcomes. To address critical gaps in oxygen availability, UNICEF pioneered the development of the Oxygen System Planning Tool, a strategic innovation that enables countries to design sustainable, data-driven supply roadmaps. Further advancing its commitment to innovation, UNICEF introduced a modular, plug-and-play "plant-in-a-box" model, deploying over 150 systems across 45 countries alongside tens of thousands of oxygen concentrators and pulse oximeters. Beyond procurement, UNICEF has driven systemic change by optimizing energy efficiency, fostering local engineering expertise, and integrating hypoxemia management into pediatric and newborn care protocols. Looking ahead, UNICEF is spearheading next-generation innovations, such as solar-powered oxygen plants and energy-efficient concentrators, to ensure a resilient and reliable oxygen supply in even the most resource-constrained and challenging environments.

These examples illustrate a fundamental principle: Innovations – whether in AI diagnostics, medical oxygen or other areas – can only achieve their potential if they are tailored to local contexts, properly financed and embedded into health systems. To maximize the global impact of these innovations, it is crucial to tackle the challenges related to affordability and health systems and human capacity. Overcoming these barriers is essential to ensure that health innovations reach those who need them the most and achieve their intended benefits.

PHOTO: UNICEF

AFFORDABILITY: FINANCING AND MARKET SHAPING

In a challenging fiscal environment, countries must invest more domestic resources in health. And while securing more funding is important, the immediate priority is ensuring that existing resources are used as effectively as possible. This means prioritizing only those innovations with the greatest value for money, tailored to a country's economic abilities and specific health needs.

To address this, global health actors must play a critical role in supporting countries in making tough but essential prioritization decisions. Innovation functions within the United Nations and similar organizations must act as rigorous gatekeepers, ensuring that only the most cost-efficient and impactful innovations are promoted for scale-up. This requires evidence-driven decision-making, transparent evaluation of cost-effectiveness and alignment with country-led priorities to ensure that scarce resources yield the greatest possible health impact.

Reducing costs at the source is equally important. Through global reach and procurement expertise, the Global Fund and UNICEF leverage market-shaping strategies to drive down prices and enhance the affordability of innovations. This includes pooled procurement, volume guarantees and advance market commitments, ensuring that critical innovations become accessible to those who need them most.

For example, the Global Fund's market-shaping efforts have been crucial in bringing down the prices, encouraging the production and enabling the international distribution of diverse health innovations in the fight against TB, and facilitating their deployment in the settings where they are needed most. In addition to the X-ray machines mentioned above, such products include a new four-month drug-sensitive TB regimen for children, the six-month BPaLM regimen for drug-resistant TB, and shorter, better-tolerated regimens for TB preventive treatment, including 3HP and 1HP. The rapid deployment of such powerful innovations – achieved through close collaboration with national TB programs, as well as with partners like the Stop TB Partnership and Unitaid – has contributed significantly to the recent momentum in the fight against TB. Given the exciting pipeline of future innovations, along with the glaring inequities in access that continue to fuel the disease, such market-shaping efforts will remain essential to maximizing the impact of investments in TB control.

Similarly, UNICEF's efforts to expand access to medical oxygen through scalable, cost-efficient models have transformed treatment capacity in low-resource settings. But affordability alone is not enough – investments must also ensure that innovations are embedded in health systems and backed by the necessary infrastructure and workforce training.

Ultimately, while the push for more funding is an ongoing discussion, the immediate priority is ensuring that limited resources are used as effectively as possible. By guiding countries in prioritizing cost-effective innovations and leveraging market-shaping mechanisms to reduce costs, global health organizations can maximize the impact of every dollar spent.

PHOTO: UNICEF

CAPACITY: INVESTING IN INFRASTRUCTURE, SYSTEMS AND PEOPLE

Yet, affordability alone does not guarantee the successful delivery of health innovations. For countries to effectively leverage innovative tools, they need robust health and community systems with trained personnel. Expanding the capacity of health systems to deliver innovations and investing in the skills and knowledge of the health workforce in LMICs are therefore critical components of scaling innovations to maximize global health impact. This is particularly important for digital health solutions, including telemedicine, AI-supported diagnostics and integrated big-data systems for disease surveillance and early warning. Digital solutions can only make an impact if the necessary infrastructure is in place. This includes reliable electricity to power hardware and sufficient internet connectivity. Additionally, any electronic devices must be durable enough to function in challenging environmental conditions. Structures and tools must be in place to ensure electronic devices are registered and managed, functioning properly and maintained, and replaced when required. The software used must be secure enough and governed by clear privacy policies to protect sensitive health information and maintain public trust in digital health systems.

Moreover, digital health solutions can only be truly effective when aligned with national health strategies and in compliance with global digital health standards, adapted to local languages and cultural norms, and practically usable by health workers and communities. This requires the integration of digital health solutions into existing health systems, focusing on enhancing their efficiency and effectiveness, rather than creating parallel processes and redundancies. It also requires alignment with national health information exchange architectures, and underlying registries and services. Supportive policies and regulatory frameworks, as well as strong governance and coordination mechanisms, are essential to facilitate the digitalization of health systems and enable the adoption and scaling of new technologies.

Finally, the effective implementation of digital solutions requires investments in human capacity and digital literacy. Healthcare workers must know how to use digital tools effectively. Digital literacy at the community level ensures that patients and families can engage with new health technologies. Finally, health workers must have the digital skills necessary to not only use these digital platforms effectively, but also to engage safely online while protecting the sensitive data of the communities they serve.

An illustrative example of leveraging innovative digital tools to enhance health outcomes is the development of a new digital disease surveillance system in the Democratic Republic of the Congo (DRC), supported by the Global Fund. In a country where disease outbreaks threaten public health, weak reporting systems have historically slowed responses. To tackle this, DRC leveraged digital tools to track outbreaks in real time, integrate data from multiple sources and coordinate responses faster. This new system is not just a digitalized version of an existing one, but an integrated approach that enhances the capabilities of the existing health infrastructure. By investing in internet connectivity, training health workers on digital platforms, and ensuring data security, the system has improved early detection and response to health emergencies.

PHOTO: UNICEF

CONCLUSION

In the fight to end infectious diseases, innovation is our most powerful weapon for a healthier world for all. However, even the most advanced tools will be ineffective unless we ensure they reach those who need them most. This means addressing the cost of these innovations, the practical challenges of accessibility and inclusive policies for the most vulnerable populations. As global health funding evolves, organizations like the Global Fund and UNICEF are rising to the challenge. They are adapting to ensure that lifesaving health innovations are not just affordable and scalable, but also sustainable. These organizations are leading the way by prioritizing country-led ownership and local expertise while leveraging their global influence to ensure equitable access to these innovations across the world. To succeed, this effort needs strategic partnerships, innovative financing and a focus on strengthening health and community systems. We are at a critical moment in the fight against infectious diseases. With the right investments and policies, we can ensure that tomorrow's innovations are not just promises, but real solutions available in every corner of the globe, protecting communities from today's deadly diseases, as well as future health threats. It's time to turn vision into action and transform innovation into health for all.

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PHOTO: ADOBE STOCK

FUTURE INVESTMENT INITIATIVE (FII) INSTITUTE is a global non-profit foundation with an investment arm and one agenda: Impact on Humanity. Global, inclusive and driven by data, we foster great minds from around the world and turn ideas into tangible solutions and actions in four critical areas: Artificial Intelligence (AI) and Robotics, Education, Healthcare and Sustainability. We are in the right place at the right time, when decision-makers, investors and an engaged generation of youth come together in aspiration, energized and ready for change.

We harness that energy into three pillars: THINK, XCHANGE, ACT. Our THINK pillar empowers the world's brightest minds to identify technological solutions to the most pressing issues facing humanity. Our XCHANGE pillar builds inclusive platforms for international dialogue, knowledge-sharing and partnership. Our ACT pillar curates and invests directly in the technologies of the future to secure sustainable real-world solutions. Join us to own, cocreate and actualize a brighter, more sustainable future for humanity. ←

THE FII INSTITUTE

is guided in all it does by a strong purpose, vision and mission.

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"Enabling a brighter future for humanity"

VISION

"Bringing together the brightest minds and most promising solutions to serve humanity"

MISSION

"Creating a purposeful present, promising future"

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FII-I has three pillars to deliver its mission: THINK, ACT and XCHANGE

1 FII-I THINK
Identify societal challenges and current inhibitors. Curate the brightest ideas to address societal issues

2 FII-I ACT
Catalyze innovation and initiatives by mobilizing partners and resources

3 FII-I XCHANGE
Create platforms for live discussions on the future of humanity. Share knowledge, stories and publications with different stakeholders

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