Newsletter
Volume - 2

INDIA HEALTH FUND
A TATA TRUSTS INITIATIVE

India Health Fund (IHF) is a Tata Trusts initiative to accelerate the development, adoption and scalability of technology-led solutions by addressing the gaps in funding, mentorship and market access for ventures that could significantly improve outcomes in the diagnosis, treatment and prevention of infectious diseases.

India has a growing need for efficient and quality primary healthcare services. Evidence shows that technology and innovation can bridge the resource gap to strengthen the delivery of primary healthcare by improving access to screening, diagnosis, early initiation of treatment at the point of care, and provide data-driven decision support to strengthen health systems.

Artificial Intelligence (AI) and machine learning technology has the potential to improve speed and accuracy in screening and diagnosis, at a lower cost, enabling faster initiation of treatment and making these services more accessible at multiple points of care. AI can help improve the efficiency of healthcare services by reducing the unit cost of treatment and increasing access to treatment by supplementing the available health workforce.

The impact of technology-led innovations using AI

Through its support for technology-led solutions, IHF has been able to successfully de-risk the development, create business models and financing mechanisms to scale up these solutions that help address the public health risks posed by communicable diseases.

Intelligent surveillance solution for Malaria

The mosquito is considered the most dangerous animal in the world due to its ability to transmit vector-borne diseases like Malaria, Dengue and Zika. 3.37 lakh (0.337 million) cases of malaria and 1.30 lakh (0.13 million) dengue cases have been reported between April 2020 to March 2021.* It has been estimated that the elimination of malaria by 2030 would add $4 trillion to the Indian economy.* Most vector-borne diseases are not preventable by vaccines and can be controlled only through an integrated approach that includes surveillance, vector control, prompt case detection, and health awareness. Currently, vector surveillance depends on manual processes for sample collection and requires entomologists for analysis and reporting. The delay caused by manual processes and the shortage of entomologists makes timely vector control activities difficult to implement.

TrakitNow, a technology company in the space of public health worked on this challenge to create an affordable and scalable smart mosquito control management solution — Moskeet using Internet of Things (IoT) and AI. Supported by IHF, it aims to radically improve the quality, efficiency, and management of vector control practices to help in early control, limited spread, and eventual eradication of mosquito-borne diseases.

> *TrakitNow's Moskeet mosquito trap is touted as the first device that can autonomously detect the presence of a certain species of mosquito. It uses AI and IoT technology to provide a comprehensive and intelligent surveillance solution to classify and predict disease outbreaks.*

"Mosquito-borne diseases infect 40 million people every year, and 95% of population in India resides in Malaria endemic areas. Moskeet platform collects real-time data and provides analytics for effective control of mosquito-populations, disease outbreak risk analysis and pesticide effectiveness. IHF support helps to expand the solution capabilities to major medically relevant mosquito species in India covering diseases like malaria, dengue, chikungunya, filaria and Japanese Encephalitis."
— Satish Cherukumalli,
Co-Founder & CEO, TrakitNow

IHF is supporting Moskeet to:

- **Decipher mosquito species with an accuracy of 70 - 75% from their wing beat frequencies**
- **Identify concentrations of different species of infected mosquitoes**
- **Transmit data to government surveillance centres enabling real-time vector control activities**
- **Gather and interpret data 20 times faster, 3 times more accurately, and at 15% of the current cost of manual methods**
- **Validate the 'Moskeet' system through field deployment**
- **Enable deployment of Moskeet in multiple cities to showcase the effectiveness and enable commercial scale of the device**

Know more here

Rapid diagnostic tool for Tuberculosis

India continues to carry the world's highest burden of Tuberculosis (TB). TB kills an estimated 480,000 Indians every year and more than 1,400 every day** costing India $32 billion losses each year***. Diagnosis of TB continues to be a challenge. Screening an X-ray to look for changes in the appearance of lungs that are suggestive of TB is a workforce-heavy and time-consuming process. With India facing an acute shortage of trained radiologists, getting a confirmed TB diagnosis can take weeks leading to more spread, delayed initiation of treatment and higher risk of mortality.

Qure.ai identified this problem and developed a breakthrough chest X-ray screening AI-based solution — qXR to meet this challenge. Supported by IHF, the qXR solution classifies X-rays, identifies abnormal findings and highlights them enabling the detection of the world's most infectious disease within minutes.

Qure.ai's flagship product, qXR is an automated chest X-ray (CXR) interpretation software that can prioritise abnormal X-rays and identify 29 clinically relevant lung abnormalities. CE certified, qXR software, is trained on over 3 million chest X-rays using deep learning, and accurately detects clinically relevant findings suggestive of lung diseases like Tuberculosis.

"Previously, we only collected sputum for patients referred by the doctor, and a lot of patients visiting the OPD who were TB suspects got missed. After the introduction of Qure.ai's software within the hospital, all chest X-Rays taken are now tracked for signs of TB and we actively follow up with all patients who are identified as TB Presumptive on the qTrack app and call them to provide sputum, which was not the case before. This not only ensures that patient is not missed, but they also get diagnosed early since chest X-ray results are available instantly."

- Sushma Wankhede, Lab Technician, Shrimati Diwaliben Mohanlal Mehta Maa Sarvasadharan Rugnalay TB Unit

IHF is supporting qXR to:

- **Improve the identification of missed cases of TB due to the non-availability of radiologists**
- **Enable faster, cheaper, and more accurate screening of TB patients in low resource settings**
- **Bring down delays in diagnosis from an average of over 50 days to less than 7 days**
- **Make screening test affordable - INR 100 (~USD 1.3) per test**

Know more here

Early and accurate detection of COVID-19

Following the break of COVID-19 pandemic, the use of Qure.ai's technology was further developed to enable healthcare providers to identify and triage cases of COVID-19 along with TB using the AI-based qXR solution. The system was able to detect lung abnormalities related to COVID-19. IHF facilitated the fundraising and deployment of the qXR solution for COVID-19 with the Municipal Corporation of Greater Mumbai (MCGM) bolstering its COVID-19 response efforts across 15 sites in Mumbai.

Results: Reduction in turnaround time by detecting radiological signs of COVID-19 in under a minute | 25,000 chest X-rays processed | 20% were instantly reported by qXR as having COVID-19 indications- this included asymptomatic cases | Screening and triaging COVID-19 suspects helped optimal utilisation of limited RT-PCR kits | qXR was proven to be a reliable and progressive decision support tool, enabling non-specialists to screen patients without radiologists.

With this support, IHF was quick to address the challenge of COVID-19 and continues to work to adapt solutions already available for other diseases to ensure speed to market, thereby supporting the development of breakthrough solutions for diagnosis, treatment, and prevention of COVID-19.

The collective power of partnerships

Being a collaborative platform, IHF continues to establish partnerships that help build an eco-system that supports the development, adoption and funding of innovations and enables their growth journey to scale.

Digital health and AI

IHF is proud to partner International Digital Health & AI Research Collaborative (I-DAIR), a global network of scientists, foundations and health actors to facilitate collaboration on research into digital health and AI.

I-DAIR's work involves exploring how data and AI can be used to solve health problems through a series of research projects.

I-DAIR shares 5 ways Artificial Intelligence can improve healthcare outcomes here which include a paradigm shift to a community-centred healthcare approach; embracing new models of inter-sectoral and cross-border collaboration; exploring a new governance model for AI in health; bridging the health gap and digital divide to ensure equitable healthcare; and sharing of knowledge tools.

Read the article here

Call for digital innovation ideas to strengthen primary healthcare

AMRIT GRAND CHALLENGE

जन CARE

Reimagining the Healthcare Delivery - Touching a billion lives

- 75 Healthtech innovation from startups and entrepreneurs
- Innovation for Telemedicine, Digital Health, mHealth with Big Data, AI/ML, Block Chain and other technologies
- Opportunities for Funding, Mentorship and Scaling up Several States, MedTech Industries, Hospitals and Corporates onboard

75 Azadi Ka Amrit Mahotsav

AREA OF FOCUS

- Access to primary healthcare in tier-2, tier-3 cities and rural settings
- Solutions to enhance patient compliance
- Health Data Collection, Predictive Analysis and Digital Learning in Medicine
- Data Privacy, Storage and Security Solutions
- Solutions for improved community outreach
- Data driven modeling to enable pharma/ biopharma research development and Innovation

Solutions aligned with National Health Digital Mission and Ayushman Bharat will get preference.

Funding Support

Ideation and Testing	Pre-commercialization	Multi-centric Product Deployment
60 early-stage innovations	13 Late-stage innovations	2 Advanced stage innovations
INR 10 Lakh each	INR 20 Lakh each	INR 50 Lakh each

Apply online : www.birac.nic.in by 31 March 2022

IHF has partnered with Biotechnology Industry Research Assistance Council (BIRAC), Department of Biotechnology — Govt. of India in the ongoing जन CARE initiative and the upcoming Amrit Grand Challenge to identify and support digital innovations to strengthen access and quality of primary healthcare.

If you are an entrepreneur, start-up or an organisation working on innovations that can positively impact healthcare delivery, and are passionate about strengthening the healthcare ecosystem in India, here's your opportunity for funding support.

Apply by 31st March 2022

We, at IHF would love to hear your thoughts and feedback. Please do send us an email at
contact@indiahealthfund.org

India Health Fund

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