



**Annual Report
2021 - 2022**

Enabling science and technology to strengthen primary healthcare



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Message From The CEO

The COVID-19 pandemic has shown us that no one is safe until everyone is safe when it comes to infectious diseases. So, if we are to cripple infectious diseases, we must ensure that we reach everyone in need through strong primary care services.

Science- and tech-led innovations have proven their potential in strengthening primary healthcare and transforming lives with a speed, scale, and cost unthinkable for conventional methods. Harnessing the power of these innovations and making them fit-for-purpose so that they can reach the hardest-to-reach and facilitating their adoption and scale-up has been the underlying mission of the India Health Fund. From funding the validation of a battery-powered rapid PCR test for TB, to the development of a \$1 one-minute test for spotting malaria, from deployment of an artificial intelligence (AI)-based X-ray screening solution for TB to using AI for predicting mosquito-borne disease outbreaks – equitable access to game-changing innovations has been at the core of all our projects.



As we turn five-years old, we look back at how far we have come -- from evaluating over 800 potential innovations to funding the development of 10 innovations out of which 5 have been adopted by the public health system, from establishing 15 key partnerships to helping our innovations get co-funding commitments. Moving forward, we will not only scale up these innovations and take them from India to the world but also continue to scout for accurate, low-cost, easy-to-use, efficient tools to:

- Improve early diagnosis of infectious diseases
- Democratize access to treatment, and follow up care with digital solutions
- Provide data and analytics for decision support to healthcare providers
- Improve supply chains throughout the continuum of care
- Strengthen surveillance capacity and capabilities to improve case finding and control disease outbreaks.

As we look on to the road ahead, laid with newer point-of-care innovations, stronger collaborations, smarter solutions, and a sustainable future, we hope that together we can go closer to strengthening primary health systems, uprooting infectious diseases and ensuring that no one is left behind in this journey.

Madhav Joshi,
Chief Executive Officer,
India Health Fund



The IHF story: catalysing India's progress towards elimination of infectious diseases

It was in 2016, the Tata Trusts launched the India Health Fund (IHF) in a strategic partnership with The Global Fund to Fight AIDS, Tuberculosis and Malaria. IHF was to be a pioneering vehicle designed to serve as a trusted mechanism to generate significant impact in addressing key health challenges in the country – starting with malaria and tuberculosis.

“

On the launch of IHF, Mr. Ratan Tata, the chairman of Tata Trusts, had said:

The India Health Fund is an ambitious project undertaken by Tata Trusts along with The Global Fund and the Government of India. Infectious diseases such as Malaria and Tuberculosis though widespread are treatable and controllable. In order to overcome the challenges associated with this issue, we should use innovations to create models that are not geographically bound and can be replicated anywhere in the world. The India Health Fund will endeavour to combine innovation and effort for the implementation of the project at a large scale.”

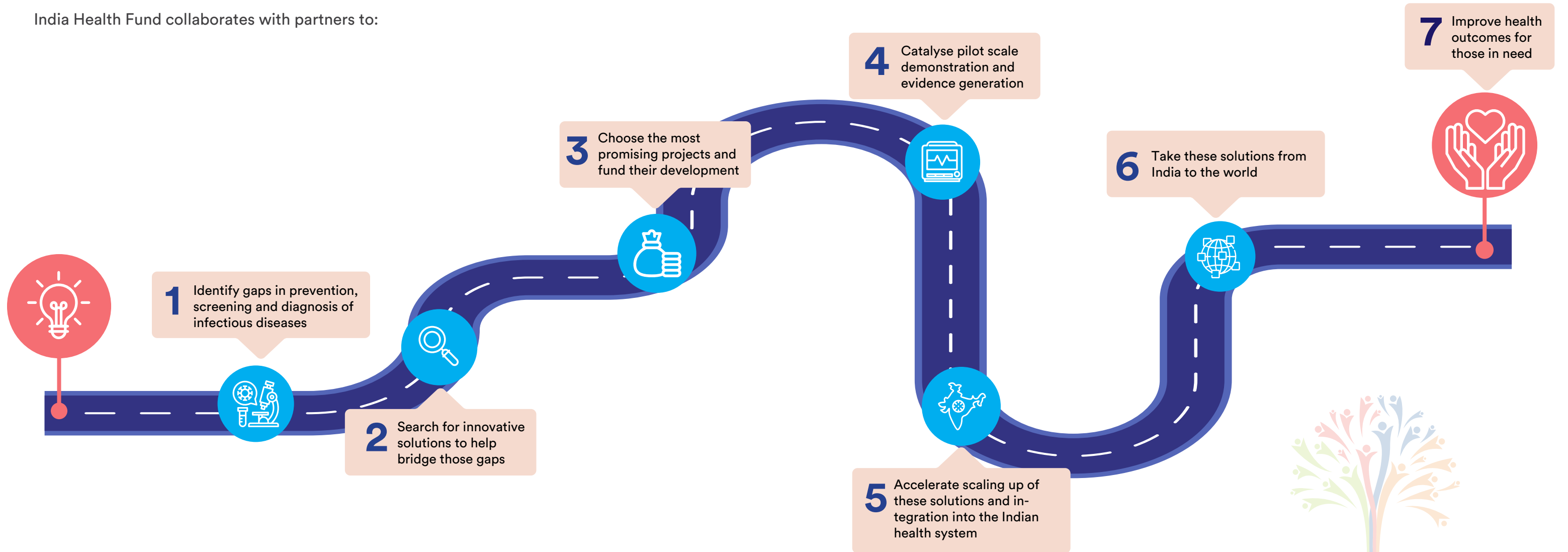
Since then, IHF's work has supported programs and projects that develop new products or strategies for innovative business models and innovative partnerships or financing mechanisms that significantly scale existing effective solutions in healthcare.



What we do?

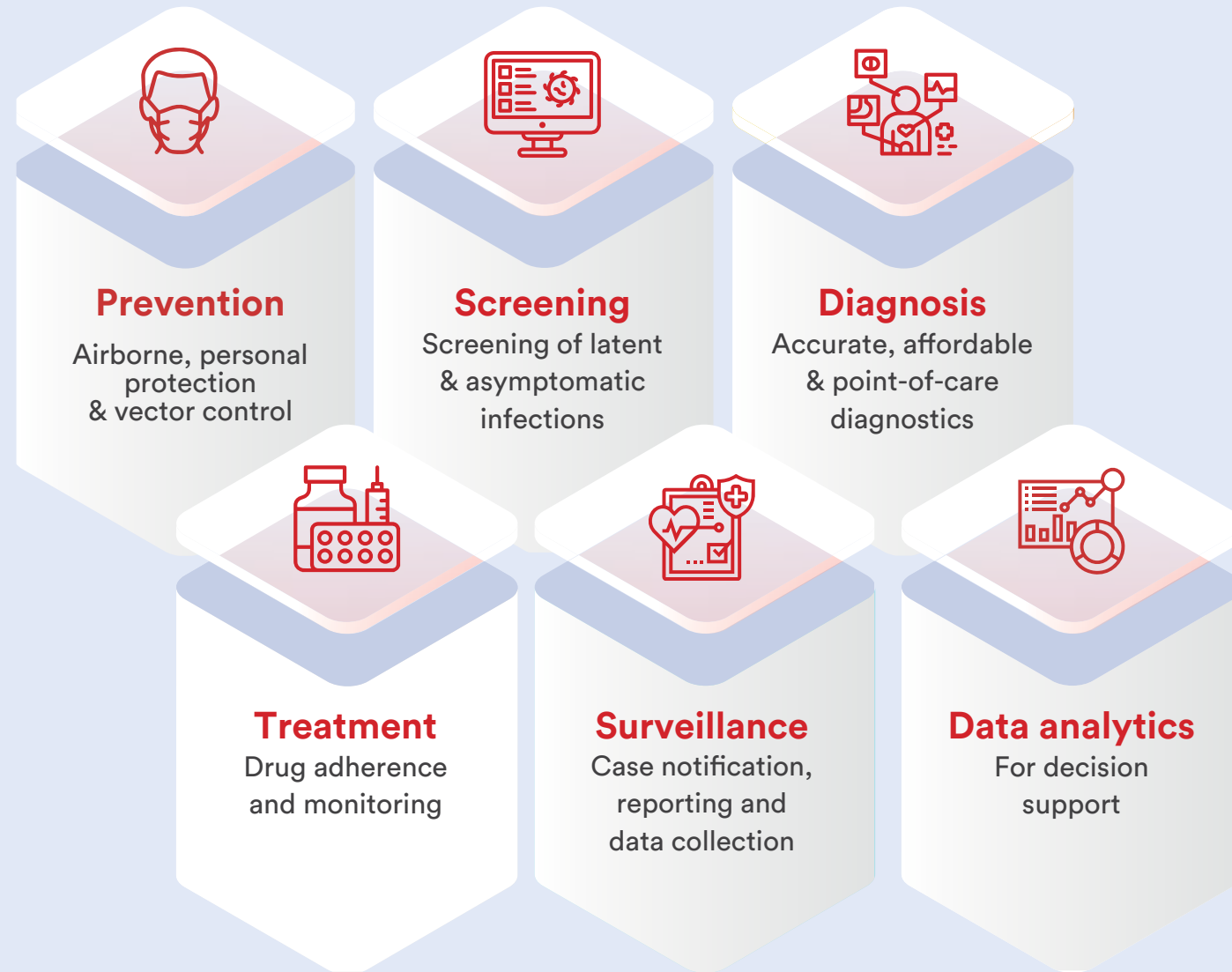
Transforming an idea to large-scale impact

India Health Fund collaborates with partners to:



Areas of our work

Identifying and enabling innovations across six key pillars



Our Impact

Since inception in 2017, the India Health Fund has



Evaluated over **800 potential** innovations



Funded and supported the development and adoption of **10 innovations**



5 of 10 projects have now entered the public health system



Established 15 partnerships to enable innovation development, validation, evidence generation and market access



Helped **IHF-supported innovations** secure co-funding commitments





Changing lives...
one innovation at a time

1 | Truenat – a fast PCR-based TB detection method to find the missing millions

The absence of specialized testing facilities and skilled technicians to diagnose TB results in several cases going undiagnosed (“the missing millions”), thereby hampering efforts to eliminate the disease around the world. TB patients in low-resource settings lack access to accurate and rapid TB diagnostic tests at point of care leading to delay in

diagnosis and treatment initiation.

IHF-funded the validation of Molbio Diagnostics’ Truenat. Truenat is a compact, chip-based, battery-operated RT-PCR system which provides test results at the point of care within 90 minutes. This enables same day reporting and initiation of evidence-based treatment of TB, which reduces the

risk of infection spreading while waiting for test results and facilitates faster recovery due to early initiation of treatment. It is significantly cheaper per test than other RT-PCR tests. Furthermore, Truenat is a multiplexing platform which supports tests for several diseases, including COVID-19, making it a cost effective and capital efficient solution.



Features of Truenat

- 01 Speed of test results:** 92% TB test results reported on same day (vs. 7 days)
- 02 Speed of treatment initiation:** 96% of the patients initiated treatment within seven days of test results
- 03 Drug resistance testing:** 100% patients tested for drug resistance
- 04 Point of care:** needs minimally trained manpower at community health centres
- 05 Health system integration:** is currently in use nationally by Central TB Division for TB diagnosis



“

The strong engagement with the user community as well as with public health experts that the India Health Fund enables, greatly smoothens the lab-to-market journey and facilitates deployment at scale.

Such support from IHF has been invaluable for Molbio during the scaleup of the Truenat platform.”

Chandrasekhar Nair,
Co-Founder & Chief Technology Officer,
Molbio Diagnostics



Development to deployment

- Truenat is the first PCR based platform which can be used to test patients for TB and COVID-19 and was validated for effectiveness as a TB diagnostic test at community health centres in Uttar Pradesh with support from India Health Fund
- Brihanmumbai Municipal Corporation (BMC) successfully implemented India's largest bi-directional testing initiative for TB and COVID-19 using Truenat. This has created long term capacity for increased TB testing and surge capacity for COVID-19 testing in Mumbai without the need for additional manpower.

2 qXR: an automated chest X-ray screening solution for tuberculosis

Quick 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 missed TB cases, increased disease spread, delayed initiation of treatment and higher risk of mortality.

IHF and Qure.ai identified this problem and developed a breakthrough AI-based chest X-ray screening software—qXR.

qXR classifies X-rays, identifies lung abnormalities and highlights them on the X-ray, enabling the detection of TB within minutes. CE certified, the qXR software, is trained and tested on over 3.7 million chest X-rays using deep learning.

“

Qure.ai and the India Health Fund (IHF) have collaborated to scale up the use of advanced technologies

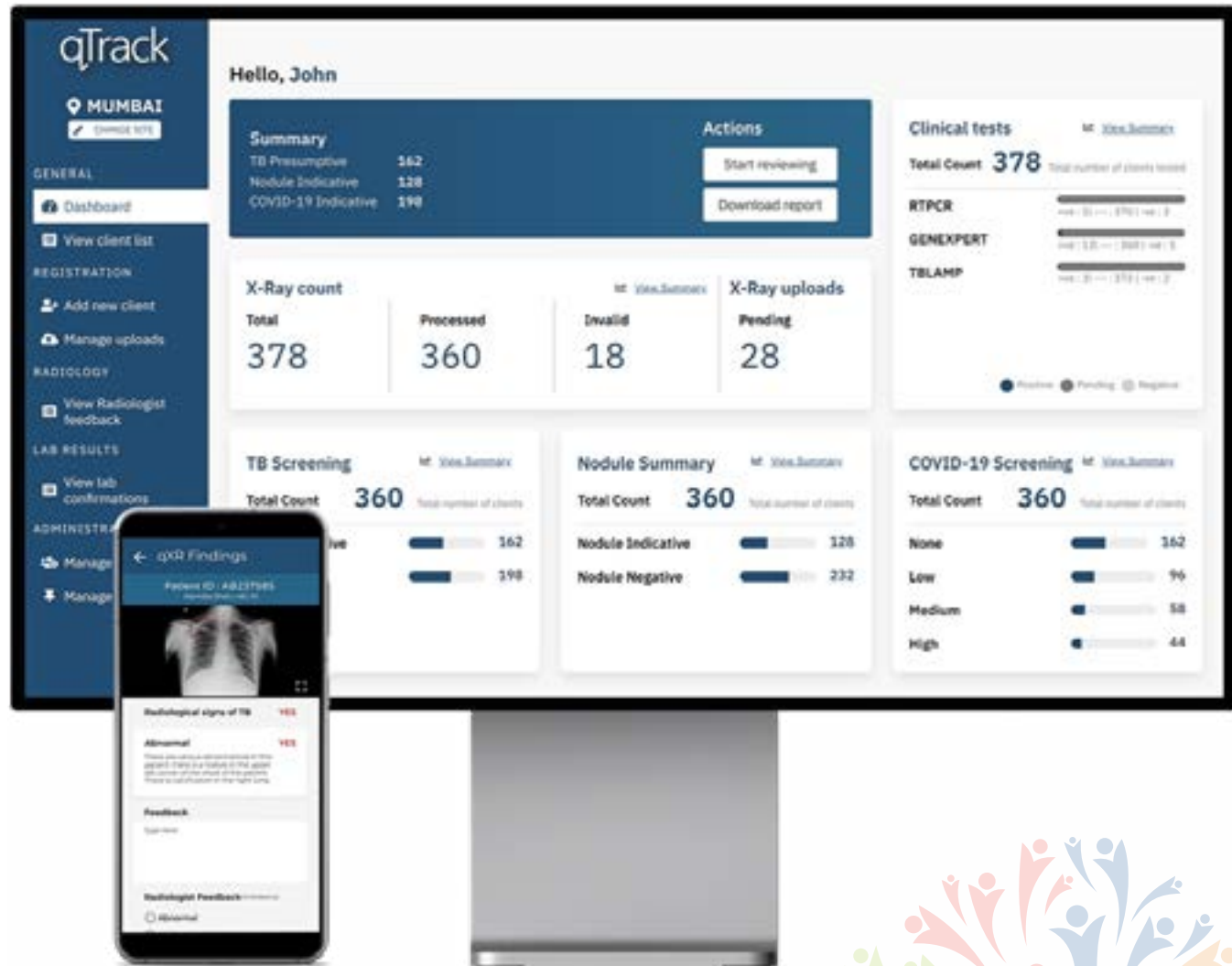
like Artificial Intelligence for Tuberculosis (TB) screening and to develop an affordable point-of-care system to digitize analog Chest X-ray films. With IHF's support, Qure has enabled numerous healthcare centres and PHCs to embrace technology and optimise TB screening with cost-effective and minimal infrastructure. Together, we are empowering Indian healthcare providers to bridge healthcare delivery gaps across rural-urban belts.”

Prashant Warier,
Co-founder and CEO, Qure.ai

Features of qXR

- 01 Accuracy:** more accurate screening of TB patients in low resource settings with upto 33% additional TB cases detected
- 02 Speed:** Brings down delays in diagnosis from ~ 50 days to less than 7 days, so that treatment can start promptly
- 03 Cost:** makes screening affordable - INR 100 (~USD 1.3) per test; 55% cost reduction to health system as fewer PCR tests required
- 04 Point of care:** can be used easily at primary health centres, without need for radiologists

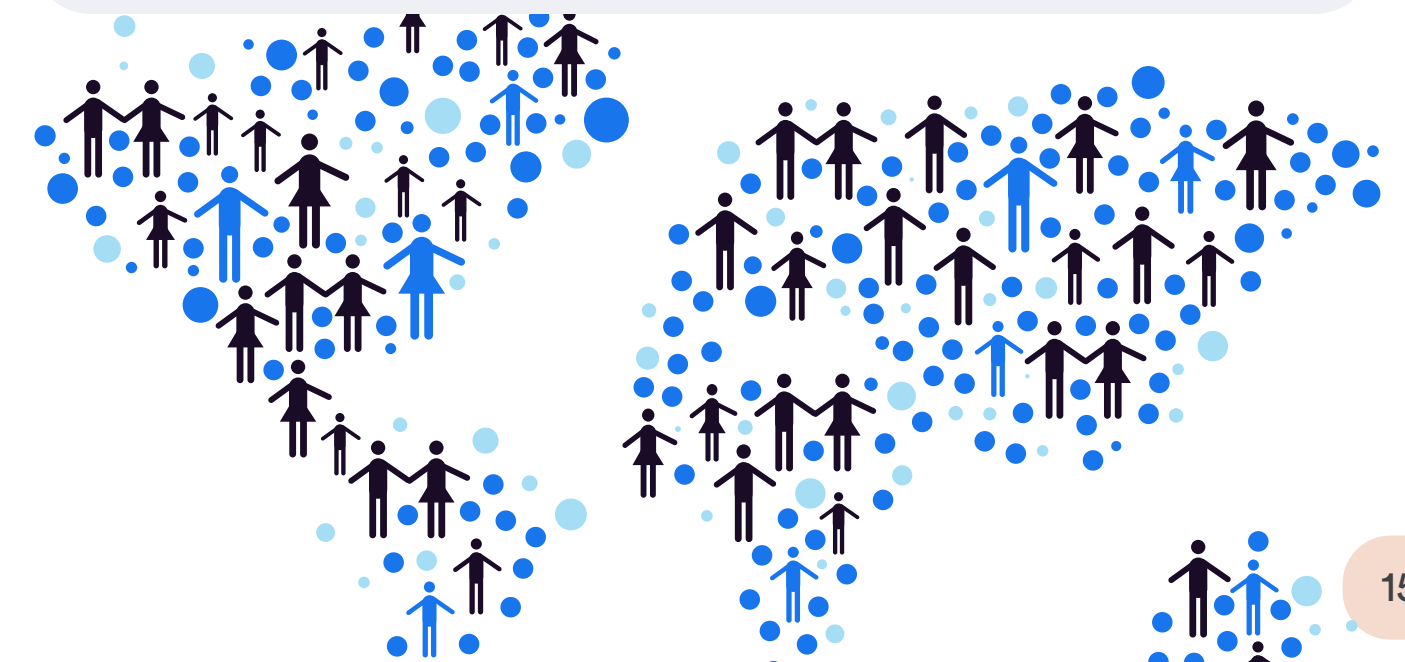




Development to deployment

Following the outbreak of COVID-19 pandemic, the use of Qure.ai's technology was adapted 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 Brihanmumbai Municipal Corporation bolstering its COVID-19 response efforts across 15 sites in Mumbai. These efforts resulted in:

- 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



3 Cutting down zoonotic (cattle to human) transmission of TB

Bovine tuberculosis (TB), an infectious disease of cattle, is the seventh largest disease threat to humans transmitted from animals. Currently, it takes a veterinary doctor nearly four days and two visits to diagnose bovine TB, making diagnosis an expensive and time-consuming process, which

increases the ease of spread to humans.

To tackle this problem, IHF funded CisGEN Biotech Discoveries Private Limited to develop, validate and manufacture a robust and rapid bovine TB test kit that uses a unique combination of antigen proteins

that can differentiate whether the bacterial infection is from TB-causing bacteria or from another environmental mycobacterium. First of its kind, the kit is truly a “One Health product” which looks at the interconnectedness between humans, animals, and the environment.

“

IHF helped us financially in upscaling and validation of our animal health care product.

IHF also provided us with technical and network support required. IHF mentored us to have a business portfolio for our products.”

Dr. Maroudam Veerasamy,
Director, Cisgen Biotech Discoveries
Private Limited



Features of CisGEN kit

- 01 Specificity:** 100% specific against skin test, the acceptable threshold for animal TB detection
- 02 Accuracy:** 75-80% sensitivity, thereby minimizing false positives and false negatives
- 03 Speed:** provides result in just 10 min
- 04 Cost efficacy:** priced at INR 50 (\$0.7) per animal, which is 7x cheaper than the available tests
- 05 Ease of use:** deployable in farms with minimally trained manpower and does not need any bio-containment facility



Development to deployment

- The product was field tested by the National Dairy Development Board (NDDB) and was validated for 95% sensitivity and 100% specificity.



4 TMEAD: A smart pill-box friend that helps TB patients follow treatment

One of the difficulties in TB treatment is its long duration, where patients must take medicines anywhere from 6 months-2 years. The side effects linked to the medications often drive patients to stop or skip doses. As a result, the illness returns, and the bacteria get an opportunity to develop resistance to the TB drugs. Ensuring proper adherence to medication can significantly reduce the incidence of drug resistance. Currently, checking adherence depends on healthcare workers following up manually with patients.

IHF-funded and SenseDose Technologies-led TMEAD (Tuberculosis Monitoring Encouragement

Adherence Drive) is a device that helps TB patients successfully complete their treatment using digital adherence technology. The smart pillbox comes preloaded with prescribed pills, which are also pre-sorted by dose. Using Internet of Things & cellular network technology, TMEAD box reminds patients, dispenses medicines, monitors their uptake and rings a physical alarm as well as sends digital reminders when patients miss their medication. Moreover, the pill box also notifies health workers about patients' adherence to treatment, thereby easing their workload, enabling remote patient monitoring and improving case tracking.

By categorizing patients based on their level of adherence, TMEAD helps healthcare workers provide differentiated care. It also helps them keep a track of patient prescription, which reduces the time a certain patient has to spend at primary healthcare center, thus reducing the risk of spreading the disease.



Features of TMEAD

- 01 Physical reusable device:** that can be pre-loaded with 15 days of medication and can dispense 18 tablets at a time
- 02 Has a rechargeable battery:** that holds charge for 30 days
- 03 Ease of use:** has the medication already organized and ready to be dispensed
- 04 Increased adherence rate:** 92% adherence after deploying their platform in Nashik in comparison to the average 62% adherence rate. An estimated 85% adherence is needed to reach the global TB goals
- 05 Real time alerts:** for patients, their caregivers and healthcare workers

“

TB requires a prolonged medication where the number of medicines are way too much for patients.

The device acts like a digital nurse that reminds patients to take their medication and manages their daily dose. It also helps the healthcare workers support these patients better. IHF is the perfect platform to help early innovators (like us) in achieving their goals.”

Rahul Doshi and Nishad Halkarni,
Co-founders of SenseDose Technologies

Development to deployment

- The improved patient outcomes achieved by using TMEAD for TB treatment adherence in pilot scale deployments supported by IHF prompted the District TB Office of Ahmedabad to use the device among 350 drug sensitive TB patients in Ahmedabad, to be followed by use across Gujarat.

5 Moskeet: an intelligent surveillance solution to classify and predict mosquito-borne disease outbreaks

The mosquito is the most dangerous animal on Earth due to its ability to transmit vector-borne diseases like Malaria, Dengue and Zika. In India alone, there were 3.37 lakh cases of malaria and 1.30 lakh cases of dengue between April 2020 and March 2021. Moreover, the elimination of malaria by 2030 is estimated to 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 methods to catch, collect, count and classify mosquitoes, and requires expert entomologists for analysis and reporting. The delay caused by manual processes and the shortage of entomologists makes timely vector control activities difficult to implement.



To tackle this problem IHF funded TraktItNow to develop Moskeet, which is a surveillance tool that uses artificial intelligence and internet of things to identify infected mosquito species based on their wing beat frequencies and to determine their hotspots in real time. By transmitting live data to central surveillance centres, Moskeet enables effective vector surveillance, and guides control activities for Malaria, Dengue, Chikungunya, Japanese Encephalitis and Zika Virus.



Features of Moskeet

- 01** Moskeet is the **world's first commercially available mosquito trap** that can autonomously detect the mosquito species.
- 02** **Smart Trap:** can capture a broad spectrum of mosquito species using multiple attractants & sensors.
- 03** **Real time reporting** of mosquito maps (by location, numbers, gender and species) ensures fast and efficient management of mosquito-borne diseases
- 04** **Count and classify:** the technology can count the number of mosquitoes, identify the gender and distinguish at least 10 different types of mosquito species
- 05** **Speed, accuracy and cost:** Moskeet gathers and interprets data 20 times faster, 3 times more accurately, and at 15% of the current cost of manual methods

“

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, TraktItNow



Development to deployment

- TraktItNow is being used by three municipalities (Greater Hyderabad, Thiruvananthapuram and Panjim) as it helps improve vector surveillance and control by reducing manual methods.

6 Screening malaria in one minute with a \$1 test

India is home to 3% of the 241 million world's malaria cases and 2% of the 627,000 global malaria deaths with *Plasmodium falciparum* (Pf) and *Plasmodium vivax* (Pv) being the most common types found in the Indian population. Pv infections are becoming increasingly prevalent in India, however, these infections tend to have low parasite counts and are therefore often missed by conventional diagnostics.

Among the existing range of diagnostic tests, while PCR and LAMP molecular tests are very sensitive, they are also very expensive. On the other hand, microscopy-based diagnosis is a challenge in peripheral settings due to the need for highly skilled

microscopists. Moreover, microscopy has accuracy limits in detecting low parasite counts associated with Pv infections.

The lack of an accurate, affordable and quick diagnostic test for malaria detection and species identification often delays treatment initiation and thus contributes to mortality.

To address this gap, IHF funded Hemex Health to develop Gazelle – a one-minute, highly sensitive, rapid diagnostic test (RDT) for malaria, which simply detects Hemozoin, a metabolic byproduct of malaria infections. Using a single blood sample at the patients' doorstep, the device can detect the presence of both Pf and Pv parasites in just one minute.



Features of Gazelle

- 01 Speed:** a rapid solution that tests for malaria in one minute
- 02 Accuracy in species differentiation:** 91% accurate in differential diagnosis of malaria
- 03 Better sensitivity to Pv:** the type of malaria that is most difficult to eliminate
- 04 Linkage to surveillance:** enables automated data acquisition and transmission of case-patient details to the malaria surveillance system resulting in real time reporting
- 05 Affordability:** the targeted cost per test is at \$1
- 06 A multiplexing platform:** that supports testing for other diseases such as sickle cell disease, beta thalassemia, that often occur in the same area as malaria
- 07 Point of care:** needs minimally trained manpower

“

IHF has helped us continue the momentum and development of our malaria technology.

They connected us with many of the top leaders/advisors in malaria in India. This group provided feedback on how to improve our project. IHF has been a real partner alongside us to work to achieve the project goal. The last 2 years were beyond anything we could have expected. We had to stop collecting data, delay the project and were unable to come to India directly. But IHF stayed with us, kept focused on the goal and that made a big difference.”

Patti White,
CEO - Hemex Diagnostics

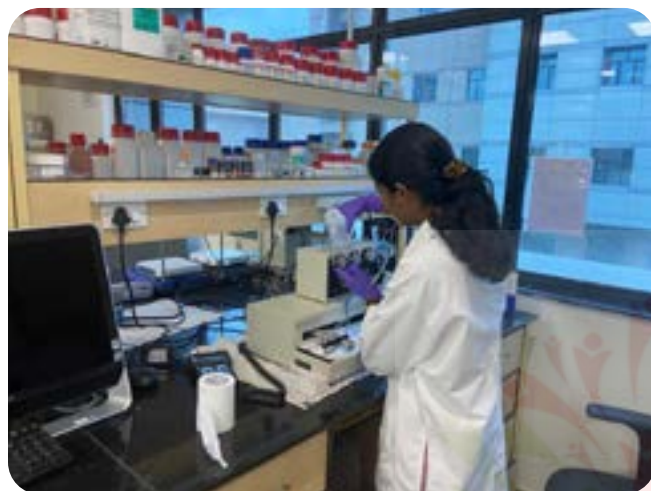
7 The world's first point of care biomarker-based test to enable rapid and low-cost triage of potential TB patients

Currently, India spends large resources testing millions of TB suspects annually to identify the confirmed cases. 7-10 presumptive TB suspects have to be tested to identify one TB patient. Conventional methods for diagnosing TB are not very accurate and can take 6-8 weeks to produce results. On the other hand, accurate culture and molecular TB confirmatory tests are time-consuming,

expensive and cannot be used for screening all suspected TB patients. Also, the available diagnostic tools can fail to identify patients with low bacterial burden and result in missing millions of cases.

Towards helping find these missing millions with an affordable, accurate and fast triage solution, IHF funded Stellar Diagnostics India Private Limited. The

point-of-care TB triage test has the potential to enable rapid triage of potential TB patients, narrowing the number of TB suspects that need to be referred for confirmatory testing and can be carried out without the need for laboratory equipment. This innovation holds the potential to dramatically reduce the financial burden on the TB control program.



Features of Stellar Diagnostics solution

- 01 **Fast:** Identifies presumptive TB patients within 20 minutes at point of care for further confirmatory diagnosis. This will significantly speed up diagnosis and initiation of treatment
- 02 **Affordable:** Allows affordable testing at a target cost of under \$1.7 per test. Furthermore, it reduces the number of avoidable expensive molecular tests conducted for presumptive TB cases
- 03 **Superior kit performance:** The test is accurate, targeting 90% sensitivity & 72% specificity
- 04 **Ease of use:** It will require no laboratory infrastructure and requires minimal training of health care workers

“

IHF came into our project as our fairy Godmother.

Not only has IHF provided us with additional funds when that were most needed, but also supported us with advice connections and regular reviews. Their understanding of the TB ecosystem in India, and their consistent positive and pragmatic support have brought lot of clarity on strategic approaches that could expedite dealing with the challenge in this venture.”

Suman Laal,
Chief Scientific Officer and Director,
Stellar Diagnostics

Development to deployment

- Government of India has begun validation of the rapid diagnostic test for TB by Stellar Diagnostics while the test is still under development as it meets an urgent national priority.



8 OmiX: A low-cost multiplex platform to detect and distinguish COVID-19, influenza and TB

India reported 1.93 million cases of TB in 2021. Influenza burden is estimated at 0.6 -1 million while COVID-19 has claimed more than 5 lakh lives so far in India. Diseases like TB, Influenza and COVID-19 manifest similar disease symptoms making diagnosis difficult for healthcare practitioners. Moreover,

patients would need to take multiple, costly and time-consuming tests that could increase the risk of the patient's condition deteriorating.

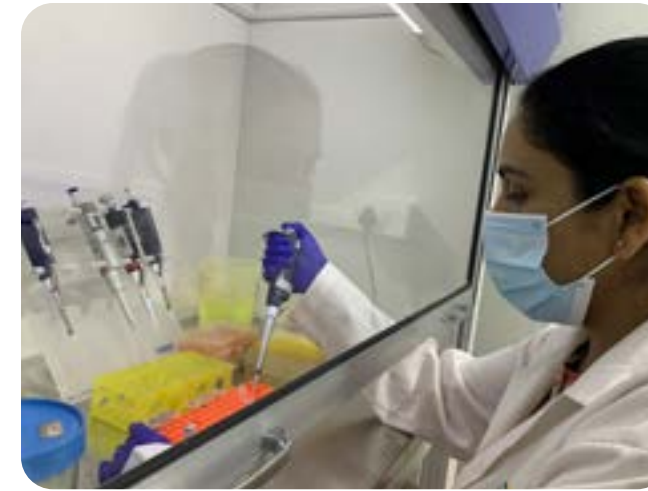
IHF funded OmiX Laboratories to develop OmiX iAMP, a multi-disease diagnostic platform that uses Loop-mediated Isothermal

Amplification (LAMP) technology to detect COVID-19, TB and Influenza.

Early diagnosis will not only improve patient outcomes by fast initiation of right treatment but also reduce the risk of spread of undetected infection.

Features of OmiX iAMP

- 01 Point of care:** designed for use in low resource settings, with simplified sample extraction and visual read-out to facilitate diagnosis. Reduces the need for a skilled workforce to interpret test results while making the test error-free
- 02 Automated test:** It will be the first, end-to-end, automated test which, does not need a thermocycler
- 03 Speed and cost:** Can potentially report 10x more tests in the same time at 1/10th the combined cost of RT-PCR tests, making vast scale adoption more feasible



“

Poor healthcare outcomes are directly correlated with socio-economic status, and it begins with lack of access to accurate and early diagnosis

Imagine being sick and the nearest laboratory is 50 kms away or the cost of a test is equal to a week's wages. The COVID-19 pandemic was yet another reminder where access to RT-PCR diagnostic laboratories in smaller towns and cities in India lagged well behind the metros. OmiX's journey is to revolutionize diagnostics to enable access to accurate and affordable molecular diagnostics not just for COVID-19, but also other debilitating infections such as Tuberculosis and Influenza.”

**Dr. Sudeshna Adak,
Co-founder & CEO, OmiX Laboratories Pvt. Ltd.**



9 Autogene TB: A one-stop shop for TB diagnosis

The Indian government has chalked out an ambitious plan to eliminate TB by 2025, however with present infrastructure it is able to notify only 58% of TB patients. A person infected with TB, if left undiagnosed, can infect on an average 10 to 15 healthy individuals in a single year.

To reduce the gap between TB incidence and the notified cases, IHF funded Valetude Primus Healthcare to develop Autogene. A one-stop

shop for TB diagnosis, Autogene enables safe collection of sputum samples from patients in specially designed capture bottles, which protect the healthcare workers from exposure to highly contagious TB bacteria. Furthermore, it provides rapid, accurate and affordable TB diagnosis without the need for skilled technicians at primary health level. The device includes a battery-operated RT-

PCR diagnosis capability with an automatic gene detection feature that can be used for a broad range of automated applications including DNA isolation & extraction, enabling faster sample processing. It is a single-step platform -- from sample collection, processing to report generation -- contrasted with the currently available manually operated devices that include multiple steps.



Features of Autogene TB

- 01 Speed and ease-of-use at point of care:**
TB diagnosis within 1 hour. Automation of this platform speeds up detection, reduces staff errors and allows for usage with minimal training of healthcare workers
- 02 Capability of detecting bacterial resistance:**
by testing for two resistance detection genes (Rifampicin and Isoniazid)
- 03 Safety:**
safer to use in terms of sputum sample collection
- 04 One-step detection solution:**
that provides a holistic report to clinicians on disease confirmation as well as persisting bacterial resistance
- 05 Integration with National TB program:**
sends results for surveillance and reporting directly
- 06 Multiplex platform:**
Autogene can also be used for the diagnosis of several bacterial and viral diseases including TB, COVID-19, Typhoid and Sepsis.



The core idea was to make the best healthcare technologies accessible to everyone and we started from diagnostics.

India is highly burdened with infectious diseases like typhoid and tuberculosis which cause high mortality and morbidity every year. A major number of these diseases come from underprivileged locations so there is need of technology that can reach such locations and also cost-effective.”

Saurabh Singh,
Co-founder, Valetude Primus Healthcare

10 A breakthrough test to speed up the diagnosis of DR-TB from 4 months to 2 weeks

The standard first-line TB treatment typically lasts for approximately 6 to 9 months. However, some patients do not respond to this first-line of treatment as the TB bacteria have become resistant. In the last two years, about 1.15 lakh people were detected with drug resistant TB (DR-TB) with fatalities accounting for about 20% of the detected patients. The 'low responders' to standard first-line TB treatment have a high chance of severe consequences, like organ failure, high probability of catching multiple drug resistance and, even, death. It also leads to increased risk of community transmission of DR-TB. In these drug-resistant cases, the patient must be switched

to second-line treatment as soon as possible. Rapid diagnosis of drug resistance is a key step to make this happen.

As per the current protocols, the effectiveness of TB treatment and thus presence of DR-TB is realised about four months following treatment initiation. Often, this leads to late diagnosis and is one of the key reasons for the increase in incidence of DR-TB and fatality linked to the disease.

To shrink these timelines for diagnosis of DR-TB, IHF onboarded HealSeq Precision Medicine Private Limited in March 2022. HealSeq's host RNA biomarker-based blood test can detect RNA signatures from TB

patients as early as two weeks after treatment initiation. The abundance of these RNA signature genes can help physicians to classify patients as good-, intermediate- or poor-responders to the treatment. Intermediate- or poor-responders, diagnosed as DR-TB patients, can be immediately shifted to second-line therapies. This is a breakthrough in the diagnosis and treatment of DR-TB as it has the potential to significantly speed up diagnosis, guide clinical decision of shifting to 2nd-line therapies, treatment initiation and thus curtail the spread of the disease.



Features of HealSeq solution

- 01 An **accurate, low-cost, easy to administer test** that can identify DR-TB early and guide the fast clinical decision to shift to second-line therapies
- 02 Ensures effective DR-TB treatment by **reducing the time to diagnose drug resistance to 2 weeks**
- 03 The test, once developed, will be available at ~₹1000, which is **1/6th the cumulative cost of the multiple tests** that need to be taken during the TB treatment course
- 04 Can be administered **using a simple RT-PCR kit**
- 05 **Turnaround time ~ 12-24 hours** vs. current method that takes 4-6 weeks



TB treatment is given for a long duration, typically lasting 6-9 months

However, not all TB patients respond to the first line of treatment. It is therefore important to recognise the efficacy of the treatment as early as possible, so that the patient can be switched to second-line therapies. HealSeq's innovation is aimed at designing an accurate molecular test that will track the patient's response to the disease before and after the treatment and improve prognosis. India Health Fund's support to HealSeq occurs at a very crucial time as we validate blood-based host biomarkers for TB. Since the India Health Fund support includes not just funding, but also efforts in hand holding, monitoring, mentoring, and integrating the company into the healthcare ecosystem, it will make a major difference to HealSeq's work in TB."

Dr. Nagasuma Chandra,
Co-founder, HealSeq Precision Medicine Pvt. Ltd.

Power of partnerships

Partnerships are at the core of what we do. We work closely with our partners to co-create solutions. Our partnerships help build an ecosystem that supports the development, adoption and funding of innovations and enables their growth journey to scale. We develop partnerships in four areas: **1. Innovation development** **2. Innovation deployment** **3. Coordination of initiatives** **4. Global innovation pathways**. Together, we ensure that our collective impact is larger than the sum of our individual strengths. Here is what some of our latest partners had to say about working with us:

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BIRAC is excited to deepen its partnership with the India Health Fund. With BIRAC's strength in incubation and IHF's focus in late-stage development, the synergies of the two organizations will ensure that great ideas seamlessly reach the last mile. Our latest collaboration in digital health initiatives including the ज्ञानCARE Challenge is a testament to the significant impact we can bring together.”

Dr Shirshendu Mukherjee,
Mission Director - Grand Challenges India; Mission Director
- National Biopharma Mission (Additional Charge), BIRAC

“



The Central TB Division, Government of India has been glad to support the India Health Fund in scouting for technology-based innovations that could help tuberculosis care continuum and also through the two-way conversations that ensure IHF-funded innovations reach their true impact and improve public health outcomes in the near future.”

Dr. Rajendra P Joshi,
DDG (TB), Central TB Division, Ministry of Health and
Family Welfare, Govt of India

“



Early diagnosis is key to saving lives. With this shared purpose, FIND and the India Health Fund are aligned to ensure that no one is left behind when it comes to screening and diagnosing critical public health diseases. Our partnership on expanding access to dual testing for TB and COVID-19 through an integrated approach using the game-changing innovative multiplex diagnostic platform 'Truenat' has been a milestone in optimising the use of limited healthcare resources. The intervention brought several precious lessons to light, which could be capitalized to transform our healthcare system and prepare for future outbreaks and pandemics.”

Dr Sarabjit S Chadha,
Regional Technical Director- India & SE Asia, FIND

“



IKP Knowledge Park looks forward to co-developing a pioneering innovation ecosystem with the India Health Fund to tackle challenges in healthcare harnessing the power of technology and innovation. Our work together will especially converge on global priorities such as digital health, infectious diseases and One Health.”

Deepanwita Chattopadhyay,
Chairman and CEO, IKP Knowledge Park



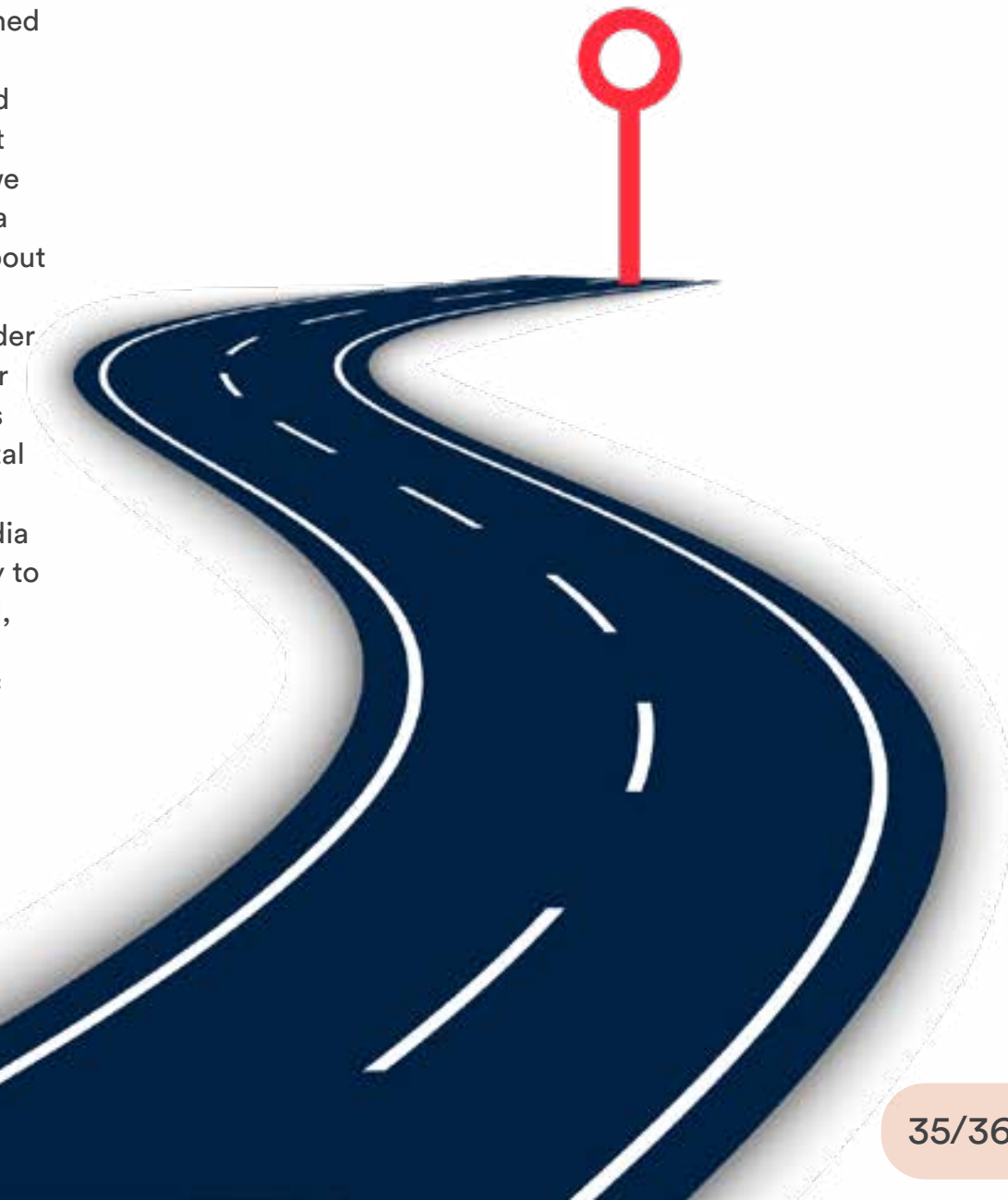
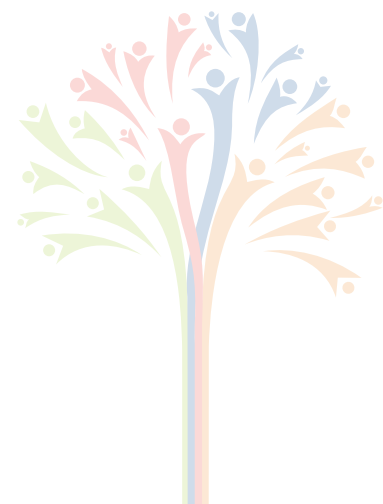
The roadmap ahead

Reaching the hardest-to-reach and bringing them game-changing innovations continues to be our mission. Over the first five years of our operation, we have carved our niche in the health innovation ecosystem by:

- Proving successful use cases which demonstrated improved patient outcomes – enabling partnerships and resource mobilization for scale up of solutions.
- Creating the first-of-its-kind platform for collaboration between government, public and private sectors to collaborate in the development, validation, financing and scale up of innovations to tackle infectious diseases.

- Establishing convergence among key stakeholders of the need to prioritise development of accurate, low-cost diagnostics and efficient digital tools for use by a minimally trained workforce in primary care to,
 - Improve early diagnosis of infectious diseases
 - Democratize access to treatment, and follow up care with digital solutions
 - Provide data and analytics for decision support to healthcare providers
 - Improve supply chains throughout the continuum of care
 - Strengthen surveillance capacity and capabilities to improve case finding and control disease outbreaks.

Building on our hard-earned successes, keeping the last mile-user in mind and placing “sustainability” at the heart of everything we do, the future of the India Health Fund will be all about maximising impact. By powering multi-stakeholder high-impact initiatives for incubation of diagnostics and development of digital health solutions for low-resource settings, the India Health Fund is now ready to step up the fight. After all, an innovation is only as powerful as the extent of impact it can bring.



About IHF

India Health Fund (IHF), incorporated as Confluence for Health Action and Transformation Foundation (under Section 8 of Companies Act, 2013), was seeded by Tata Trusts in 2017 with strategic support from The Global Fund to fight AIDS, Tuberculosis, and Malaria. IHF was conceived to help accelerate India's progress towards the elimination of infectious diseases by funding de-risking of the development of science and technology-based innovations which have the potential to make a significant difference in achieving better outcomes in the diagnosis, treatment and prevention of infectious diseases. IHF supports the development of effective business models, enables collaborations, and develops financing mechanisms for the wide scale-up of these solutions.



www.indiahealthfund.org

