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MINISTRY OF
HEALTH AND
FAMILY WELFARE



सत्यमेव जयते
Department of
Health Research



India Innovation Summit: Proceedings



INDIA innovation Summit

Pioneering Solutions to End TB

18th & 19th March

Bharat Mandapam Convention Centre, New Delhi, India

The Union

International Union Against
Tuberculosis and Lung Disease

Gates Foundation

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India Innovation Summit: Proceedings



INDIA innovation Summit
Pioneering Solutions to End TB

18th & 19th March
Bharat Mandapam Convention Centre, New Delhi, India

A SUMMIT TO REMEMBER



The event served as a platform to showcase potential TB care revolutions through advances in TB diagnosis, treatment, & prevention— while driving the nation's mission forward with transformative technologies & collaborative partnerships



The India Innovation Summit brought together over 1,400 key stakeholders from diverse sectors—uniting innovators, policymakers, healthcare professionals, and global health leaders with a common goal of accelerating TB elimination in India through innovation, collaboration, and transformative solutions.





The 'India Innovation Summit- Pioneering solutions to End TB' was held on March 18,19 at Bharat Mandapam, New Delhi. Union Minister of State for Health and Family Welfare, Smt. Anupriya Patel inaugurated the India Innovation Summit. The summit reaffirmed the government's unwavering commitment to End TB, leveraging scientific advancements and community-driven efforts to accelerate progress toward this ambitious goal.

The pivotal event brought together more than 1400 key stakeholders from various sectors to accelerate the progress toward Ending TB in India through innovative solutions and technologies. It offered a unique platform to showcase 238 innovations to regulators, policy makers, the national program, and TB experts, providing valuable recognition and visibility within the global health community. The event also served as a catalyst for supporting the scaling and implementation of these solutions.

The summit was jointly organized by the Department of Health Research and Indian Council of Medical Research in collaboration with the Central TB Division. The Union and the Gates Foundation. The experiential walkway of exhibition showcased the range and utility of existing innovations in TB Elimination Program context and created opportunities to fast track integration of proven innovations and technologies into program operations by bringing all stakeholders onto the same platform.

20 scientific sessions with 150 panelists, and an exhibition with 238 innovations, highlighted opportunities and the current advancements.

This document summarizes the scientific deliberations and exhibition at the India Innovation Summit.





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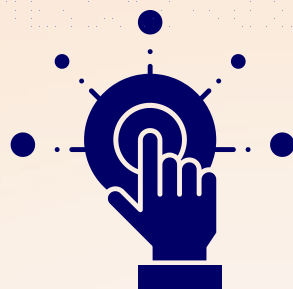


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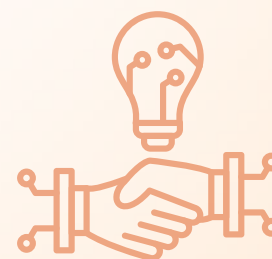


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1

SCIENTIFIC SESSIONS



The Scientific Sessions at the India Innovation Summit provided a structured platform for in-depth discussions on emerging evidence, technological advancements, and programmatic approaches in TB care. Conducted through plenaries, round tables and panel discussions, these sessions brought together experts, researchers, policymakers, and implementers to highlight key challenges and opportunities across the TB care continuum. The sessions focused on advancing diagnostics, treatment, community engagement, and multisectoral collaboration to inform policy and accelerate TB elimination in India.



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PLENARY SESSIONS





Subclinical TB and its implications to achieve end TB target



SPEAKER



Dr. Soumya Swaminathan
Former Chief Scientist, WHO &
Chairperson MSSRF

MODERATOR



Dr. Urvashi B Singh
DDG TB, Central TB Division,
MoHFW, Govt of India

SUMMARY



The concept of tuberculosis (TB) disease spectrum has emerged, recognizing that TB exists along a continuum, ranging from latent infection through incipient and subclinical disease to active TB disease. Global prevalence of subclinical TB ranges from 39.8% to 62.3%. National TB Prevalence Survey data suggests that approximately 42% of the prevalent bacteriologically confirmed TB in the general community is subclinical TB.

Transmission potential is significant for subclinical TB cases and there is evidence to show that mere breathing is enough to transmit TB. A focus on subclinical cases is very important from a transmission point of view. The potential ability to transmit the disease from subclinical TB cases has serious implications for public health and the global efforts to end TB.

SCALABLE INNOVATIONS FOR GREATER IMPACT



Scaling up of **diagnostics and optimized network** through X-ray with AI solution and confirmatory testing through **rapid molecular tests** is required.

“Not addressing sub-clinical TB could be the reason for the slow drop in TB incidence. We need to better understand this phenomenon to address it”

- Dr Soumya Swaminathan



RESEARCH PRIORITY



01 Better understanding of **natural history of TB**



02 Newer tools for **screening and diagnosis of TB**



03 Implementation research on **early case finding and management of subclinical TB**



KEY AREAS FOR FUTURE INNOVATIONS



01 Innovation needs to be directed towards **identifying better diagnostic tests**



02 Innovations are required for enhancing screening programs through **X-rays with AI solutions and confirmatory NAAT.**



Innovations in TB Diagnosis



SPEAKERS



Prof. Gagandeep Kang
Director, Gates Foundation

MODERATOR



Dr. Cassandra Kelly-Cirino
Executive Director, The Union

SUMMARY



Although gaps in access to TB care vary across countries, the main gap is that many individuals do not receive tests for TB. Diagnostic gaps extend beyond test performance. The gaps include faulty tests, missed diagnoses, lack of treatment registration, ineffective treatment, and undetected disease recurrence. Transforming TB detection requires improving access to testing, ensuring proper sample collection, reducing costs, and simplifying tests. Key transitions include shifting from microscopy to molecular testing, decentralizing labs for point-of-care access, and integrating TB detection into healthcare systems.

Recent innovations in TB diagnostics have moved beyond sputum-based testing. Easier samples, such as nasal swabs, tongue swabs, exhaled breath and urine can amplify the speed and scale of sample collection & testing, especially for those who struggle to produce sputum. These advancements improve TB detection especially among vulnerable populations like people living with HIV, elderly, and children. Non-sputum tests can be used for community screening, including asymptomatic individuals. Expanding TB testing requires exploring alternate sample types to improve accessibility, speed up processing, and enable large-scale screening with molecular tests. Lessons learnt from COVID, such as repurposing PCR labs and optimizing diagnostic networks, show how testing can be scaled up efficiently.

Targeted NGS is also expected to be used widely. AI is being integrated into TB diagnostics through digital chest X-rays, breath testing, and cough sound analysis. Recently, AI integrated point-of-care ultrasound tests and other newer options have emerged that are available focusing not just at symptomatic disease but also at infections. Regulatory approval and validation for adoption these tests are required.

“Looking ahead, beyond new sample types, molecular testing, and AI integrated digital chest X-rays, a major innovation lies in transforming the global supply chain for TB diagnostics for the world”

- Prof Gagandeep Kang



- 01** Low cost open RT-PCR tests and other point of care NAATs



- 02** Easier samples, such as nasal swabs, tongue swabs, exhaled breath and urine can amplify the speed and scale of sample collection & testing, especially for those who struggle to produce sputum



KEY AREAS FOR FUTURE INNOVATIONS / RESEARCH PRIORITY



- 01** Innovations focusing on **supply chain management** of diagnostics can address the existing challenges



- 02** Innovations based on easier, **non-invasive specimens** would **simplify TB testing and amplify** its speed and scale.



- 03** Low cost point of care tests with much **higher specificity and reasonable sensitivity** are required that can be used as screening tools.





Innovations in Improving Access to TB Care



SPEAKER



Dr. Sreenivas A. Nair
Senior Technical Advisor,
Stop TB Partnership

MODERATOR



Dr. VK Chadha
Sr. Epidemiologist, NTI

SUMMARY



The plenary focused on the multifaceted approach needed to combat TB, emphasizing the necessity of innovations in improving access to TB care. He highlighted that one of the key challenges in TB elimination is the delay in diagnosis and the large number of missed cases, especially subclinical ones. Innovations should address the identification of these hidden cases. Dr. Nair expressed optimism about future advancements with exciting innovations, such as better point-of-care tests and long-acting injectables for TB treatment. He also discussed innovative solutions like Cough AI and new screening technologies such as ultra portable handheld digital X-ray systems to reach underserved populations.

Dr. Nair stressed the importance of real-time data analysis to identify trends and improve TB care. He admired the "Nikshay" system as the best TB care data system globally, urging its potential use in conjunction with AI, climate data, and community responses for more effective interventions. He also mentioned the importance of climate-friendly TB care innovations, the BPaL/ BPaLM regimen with shorter duration and less pill burden in drug resistant TB, innovations for good nutrition support and drones for transporting samples and medicines. He concluded by reiterating the importance of scaling up practical, high-impact solutions.



"Improving access to the best available care will have maximum impact on incidence and mortality."

- Dr Sreenivas A Nair





RESEARCH PRIORITY / KEY AREAS FOR FUTURE INNOVATIONS



01 Prioritization of TB vaccination as a primary prevention tool.



02 Better testing methods for subclinical cases.





Opportunity for Government Departments for Innovators



SPEAKER



Dr. Suchita Markan

Scientist 'E', Development Research
Indian Council of Medical Research
(ICMR)



Innovators need to be aware of the vast funding landscape available to them, both nationally and internationally. Leveraging these resources effectively can significantly accelerate the technology development journey

- Dr Suchita Markan



SUMMARY



The plenary highlighted the funding opportunities available from government departments for innovators, highlighting both national and international agencies that offer financial support. She discussed about the support through key Indian agencies, including ICMR, the Department of Pharmaceuticals, DST, DBT, MSME, and NRDC, as well as global organizations such as the Bill & Melinda Gates Foundation, Wellcome Trust (India Alliance), Grand Challenges Canada, and IUSSTF. Dr. Markan elaborated on the various funding schemes available at different technology stages, covering innovative ideation, proof of concept/technology development, validation (pre-clinical/clinical study), and commercialization. She also outlined the technology development and translation journey, explaining the steps involved in transforming innovative ideas into market-ready products.

The plenary also highlighted two key flagship initiatives by the Government of India for innovators: MedTech Mitra and Patent Mitra. MedTech Mitra, a collaborative effort by NITI Aayog, ICMR, and CDSCO, offers handholding support to MedTech innovators by facilitating clinical evaluation, regulatory compliance, and product uptake. It also provides access to the Atal Innovation Mission, pre-compliance gap analysis, testing facilities, ICMR pre-clinical study support, and Health Technology Assessment (HTA) assistance. On the other hand, Patent Mitra supports innovators in patent prosecution, filing, technology transfer, and patentability assessment.





Opportunities available for Innovation under PRIP scheme

SPEAKER



Dr Richa Pandey

Director, Department of Academic and Research Division
Department of Pharmaceuticals, Gol.

SUMMARY



Dr. Richa Pandey introduced the Promotion of Research and Innovation in Pharma-MedTech Sector (PRIP) scheme, launched by the Department of Pharmaceuticals, Ministry of Chemicals and Fertilizers, Government of India. The scheme aims to transform the Indian pharmaceutical and MedTech sectors by fostering research, innovation, and indigenous development of critical drugs, devices, and technologies. Dr. Pandey outlined the vision behind PRIP — to make India self-reliant and globally competitive in the life sciences domain.

TWO COMPONENTS OF PRIP



Component A – It is proposed to establish Centres of Excellences (CoEs) at the seven existing National Institutes of Pharmaceutical Education & Research (NIPERs) at SAS Nagar (Mohali), Ahmedabad, Hyderabad, Guwahati, Kolkata, Hajipur and Raebareli at a tentative cost of Rs. 700 cr over a period of five years.

Component B – Infrastructure: Strengthening of existing national institutes through funding support to develop R&D infrastructure and capacity building.

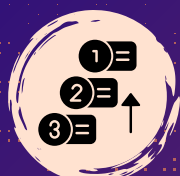
KEY TAKEAWAY POINTS



PRIP supports innovative research ideas with translational potential, particularly those that address unmet clinical and technological needs.



Encourages proposals for development of affordable, accessible, and scalable solutions across pharmaceuticals and medical devices.



Priority areas include orphan drugs, complex generics, drug-device combinations, and AI-enabled technologies.



Emphasis on interdisciplinary collaboration, sustainable business models, and commercialization pathways.



Innovations Without Access Is Not Really An Innovation

SPEAKER



Dr. Madhukar Pai

Director - McGill Global Health Programs and McGill International TB Centre, McGill University

MODERATOR



Dr Ranjani Ramchandran

WHO NPO India

SUMMARY



Dr Pai highlighted that everyone has the right to enjoy the credits of science, the highest attainable standard of physical and mental health and to enjoy scientific advancements and its benefits. Access to medicine, drugs, and diagnosis has to be made available. Access to insulin, HIV medicines, COVID diagnostic facilities, medicine, and vaccines is not a luxury. He shared examples, for COVID, many parts of the globe did not receive vaccines on time. There was no vaccine equity. There was a differential impact on the disaster, especially in low and middle-income countries.

He shared another example of HIV medicine, it took 2 decades to improve ART coverage, and by that time millions died and were infected with HIV. He shared the next example for TB, 15 years after the WHO endorsement of the Xpert MTB/RIF test for TB reached parts of the world. Access to 6 months of all oral DR-TB regimens is limited. The intellectual property is another rigid frame. Public investment is needed in technology. Global South needs to be self-sufficient. While drugs, diagnostics, and vaccines typically scale within the first two years of launch in developed countries, they often take a decade to scale in lower and middle income countries.



“Science should save all, not some”-

- Dr Madhukar Pai



STRATEGIES TO IMPROVE ACCESS TO INNOVATIONS



01 All public investment must include **global access licensing requirements** for grants and contracts.



02 Publically funded trials should have a plan for **access to the products** in the countries where trials are undertaken.



03 Better regulation of **biopharma**.



04 Increase **competition** and support **generics**.



05 Overhaul the patent system and **prevent gaming of the patent system**.



PROMOTING LOCAL INNOVATIONS



Sample banks, protocol, and product validation network, clear and transparent regulatory approval process, streamlined and fast critical path for adoption by the health ministries & TB programs, volume guarantee or clarity on procurement volumes are recommended.





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1.2

ROUNDTABLE SESSIONS





Journey to TB Elimination - Where Do We Need more Innovations?

SUMMARY



The panel focussed on areas that require more innovations in the journey to End TB in India.

Prof Urvashi Singh highlighted the efforts of detecting TB even without symptoms and early diagnosis for which screening using hand held X-rays and diagnosis using low cost molecular NAATS are being scaled up by NTEP, India. Community- wide screening in high burden areas with increased access to X-ray and NAAT need to be implemented.

Dr. Suman Rijal highlighted the need to strengthen primary health care, engage private partners and develop vaccines. He also highlighted the need to leverage national, regional and international approaches in order to address this.

Prof. Guy Marks emphasised that the benefit of screening for TB is for the community rather than the individual itself as it can stop transmission of TB. He opined that the low cost point of care tests or centralised tests with robust specimen collection and transportation, suitable for mass screening with high degree of sensitivity and specificity has the potential to rapidly scale up community-wide screening for TB.

MEMBERS



Dr. Urvashi B Singh
DDG TB, Central TB Division,
MoHFW, Govt of India



Prof. Guy Marks
President, The Union



Mr Chapal Mehra
Director, PI Consulting



Dr Suman Rijal
Director Communicable Diseases, WHO
SEARO



Dr. Madhukar Pai
Director - McGill Global Health
Programs and McGill International
TB Centre, McGill University



Dr. Jacob John
Rtd. Professor,
CMC Vellore

MODERATOR

Dr Rakesh PS
Deputy Director, The Union





Dr. Jacob John emphasised the need to design a method of objectively monitoring district wise incidence and its decline trajectory over time. He also highlighted the potential of incorporating TB screening as part of integrated annual health checks for all employees. He also highlighted the need to constitute an expert group like 'India Expert Advisory Group on TB Elimination' like IEAG-Polio.

Mr. Chapal Mehra iterated that innovation should deal with daily issues of people struggling with TB. It should aim at providing care to the community at the level they need. He also highlighted the need to innovate to provide social, economic, gender based support the community needs.

Dr. Madhukar Pai highlighted that access to an innovation is a fundamental right and it should be granted to all individuals. The country needs to work on making the current innovations accessible to everyone in the community.

KEY AREAS FOR FUTURE INNOVATIONS / RESEARCH PRIORITY



01 Non-invasive, non-sputum screening tests with high sensitivity and specificity



02 Low cost diagnostic tests for community-wide screening.



03 An efficacious TB vaccine



04 Operational innovations to strengthen **primary health care**, engage **private partners** and making the **existing innovations accessible** to all in the community





Commitment to Innovate towards Ending TB



SUMMARY



The objective of this session was to foster commitment of the key stakeholders in promoting innovations in Ending TB.

Dr. Dinesh Arora highlighted the need to focus more on finding the asymptomatic TB. He also highlighted leveraging structures like self-help groups and local governments for wider reach. ADB has come up with a three billion USD program for Asia Pacific for embracing the innovations and implementing them well and then taking to scale. He emphasised the need to have an ecosystem to support innovations like molecular testing, use of artificial intelligence, short term treatment regimens and vaccines and taking them to scale.

Mr. Madhav Joshi said that India Health Fund is a catalytic fund and supports innovations to move from bench to bedside, with 60% of spending on TB innovations. The approach is to identify early-stage solutions that need hand-holding. The focus is on primary care and solutions which really address issues of marginalised communities.

Dr. Rajiv Bahl highlighted the need to have affordable innovations. ICMR is encouraging development of home grown low cost molecular tests which could make the active case finding possible. He emphasised the need to make more progress in TB vaccines and next generation sequencing. He also highlighted the need to make AI based systems in a way that is fitting into the program

MEMBERS



Dr V. K Paul
Member, Niti Aayog



Dr Roderico H Ofrin
WHO Representative to India



Dr Trevor Mundal
President, Global Health
Gates Foundation



Dr. Rajiv Bahl
Secretary DHR
DG-ICMR



Dr Dinesh Arora
Principal Health Specialist, ADB



Mr. Madhav Joshi
CEO, India Health Fund

MODERATOR

Dr Nivedita Gupta
Head Communicable Diseases, ICMR



Dr Bahl highlighted that there are a lot of innovations that are ready for use in programs and many that are at the cusp of being readied to be used by programs. He also emphasised that ICMR has created a research and innovations ecosystem. ICMR has plans to start a section 8 company to support start-ups and industry. The Patent Mitra scheme gives accessibility to file patents free of cost for the innovators. Medtech-mitra initiative supports innovators to develop a regulatory strategy.

Mr. Trevor Mundel highlighted the need to develop low cost and precise diagnostic tests that could make the community screening for TB possible. He informed that Gates foundation is supporting research on shorter treatment regimens and vaccines.

Dr. Roderico H Ofri briefed about the experiences of active case finding from Hungary, mandatory workplace screening in Portugal and ambulatory care from the Russian Federation. He emphasised the need to have systems and an integrated approach. TB services can be integrated and the NTEP could leverage the Ayushman Bharat card, engaging communities in rural and hard to reach regions through village and health volunteers, national health insurance systems, workplace interventions, prevention and screening in prisons.

Dr. V.K. Paul underlined the need to innovate for the simplest and affordable tool for active case finding, which can detect asymptomatic cases, so that chain of transmission can be broken. He also highlighted the need for TB Vaccines. Dr Paul iterated that technology developed for TB can also have an offshoot for other diseases. He appreciated the efforts of ICMR in developing new technologies and highlighted that the pathways for validation needs to be planned properly. Collaboration between policymakers, researchers, and industry is crucial to scaling these innovations.



SCALABLE INNOVATIONS FOR GREATER IMPACT



01 Low cost precise tests for active case finding



02 Shorter treatment regimen



03 NGS based molecular tests for drug resistance



04 Vaccines



05 Operational innovations on multi-sectoral engagement



People's Movement Against TB – Innovations in Community Engagement

ROUND
TABLE 3

DAY1

SUMMARY

The objectives of the discussion were to document the experiences of engagement with the community, learning about what works and what doesn't for community engagement, the challenges encountered and what the program could do beyond what it currently does with the motive of finding solutions at the programme level to address the existing challenges in engaging the community.

Dr. Nishant Kumar described the vision of National Strategic Plan 2017 – 2025 for community-led, patient-centered TB services in India and the activities implemented by the country. TB forums were institutionalised where the different stakeholders were given a platform to contribute to improving the quality of the TB program.

The second strategy was to involve the TB survivors, build their capacity and involve them in addressing the challenge of lack for awareness regarding TB. The third strategy was to use existing platforms such as Village Health and Nutrition committees, Mahila Arogya Samitis, and involvement with the Panchayati Raj department to raise TB awareness and bring to the fore the agenda of TB.

The key innovations in the direction towards community engagement are convergence with the panchayats and putting the TB agenda on Sankalp 2 of Swasth village, capacity building of TB champions, crowdsourcing to enable individuals to support for nutrition under the Pradhan Mantri TB Mukth Bharat Abhiyan (Nikshay Mitra) address stigma and the latest one is the 100 days campaign which helped to close the gap of missing millions.

MEMBERS



Dr Nishant Kumar
Joint Director, CTD, MoHFW



Ms. Blessina Kumar
CEO, The Global Coalition
of TB Advocates (GCTA)



Dr. Sairu Philip
Professor & Head, Community
Medicine, T.D. Medical college,
Alappuzha



Ms. Richa Sharma
Chief Community Officer,
Women's Collective Forum



Mr. Mohan H.L
CEO, KHPT



Dr. Ramya Ananthakrishnan
Director, REACH



Ms. Anisha Singh
Project Director, The Union



MODERATOR
Dr. Kamalini
Mukhopadhyaya
Sr. Manager, The Union

Ms. Blessina briefed about the contribution of people-led coalitions in providing inputs to the programme. Ms. Blessina pointed out that stigma was a big challenge to access care and treatment. To highlight the problem of stigma, GCTA came out with a booklet on women and TB stigma in which 11 women across the globe narrated their stories that had great impacts and led to the development of a national strategy and cascade training. She emphasized that it is important to involve the community right from the planning stage of any intervention. She also emphasised that innovative models for financing that go beyond the project lifespan is important.

Dr. Sairu Philip shared the experiences of Kerala's TB Elimination Programme that operates under the stewardship of the Local Self Governments. Task forces were created at Panchayat level for planning and implementation. It helped to implement TB control activities that are tailored to the needs of the community, improved access to care through decentralised planning, ensured that no one is left behind and addressed some of the social determinants of health. She quoted the case of Muhamma Panchayath in Alleppey which devised its own funds for providing nutritional support to people with TB as early as 2004. LSG stewardship had positioned TB elimination as a people's movement, that is in the people's hands and ownership.



Mr. Mohan mentioned the success models of School AIDS Clubs. He emphasised that the ownership for Ending TB should come at the panchayat level, so that the stigma, nutrition and other determinants will be addressed at the lowest level. He highlighted that Panchayats have the potential to reach out to a vast majority of the population in a short time. It will help improve the accessibility, inclusivity and convergence.

Dr. Ramya highlighted that REACH has been involved in coming up with a lot of innovative community care models starting with the TB champions movement. Today the TB Survivors or TB champions are a core of the elimination programme. A Community Accountability Framework has been formed which is a community care model to effectively monitor along with the community participation and finding local solutions and in generating or mobilizing local resources. The creation of the support hubs was another innovation, where the TB champions work in TB units providing services beyond TB. Peer-centered, person-centered care approach to migrants was another initiative that was highlighted. She also highlighted the need to invest time, energy and resources in people who work at the community levels and build their capacities. She also emphasized the need for the community to be involved at all levels through need assessments, community advisory boards, continuous community feedback etc.



Ms. Richa Sharma briefed that women collectives organised three consultation sessions in Chennai, Guwahati and Delhi in collaboration with NIRT. She highlighted that the innovation lies in how we structure the policy. She opined that gender lens is important while engaging the community.



KEY AREAS FOR FUTURE INNOVATIONS / RESEARCH PRIORITY



01 Demonstration models to effectively **engage school children, younger generation, women and marginalized sections**



02 Financial sustainability of **community engagement interventions** and **innovative advocacy measures** for LSG stewardship



03 **Social science research** for documenting the **current practices and challenges in community engagement** and making it a people's movement and showcasing the success stories through scientific publications.



Operational Innovations in Community Wide Screening



ROUND
TABLE 4

DAY 2

SUMMARY



Objective of the session was to discuss the operational innovations in community wide screening.

Prof Guy Marks: Community wide screening is essential in high burden settings as TB is common among individuals even without any reported vulnerability.. It is also important to detect TB without typical symptoms and the use of symptom screening.. Improved technologies such as ultra portable hand held X-rays that are AI enabled are now available which could be used at scale for community wide screening. There is a range of tools that are now available to undertake community wide screening and countries are adopting the same leading to a faster decline in TB prevalence. We cannot have more excuses for not doing community wide screening.

Dr. Sonali Sarkar: Stigma surrounding TB is prevalent. Women with TB often face greater stigma compared to men. People with TB tend to have lower social capital than other members. Household contact screening or targeted group screening is tough to do due to stigma. Community-wide screening might offer advantages over targeted screening, in improving acceptance, as it has the potential to overcome the stigma barrier.

Dr Vineet Bhatia: Early case finding is essential to reduce incidence and mortality. A major challenge in community-wide TB screening is securing adequate funding to sustain and expand efforts. Effective early diagnosis depends on efficiently detecting TB cases, selecting appropriate target populations, and ensuring the affordability of diagnostic methods are required. Additionally, operational research is essential for reducing the cost of operations, making TB diagnosis more accessible and affordable.

MEMBERS



Prof. Guy Marks
President, The Union



Dr Vineet Bhatia
Regional Advisor, WHO SEARO



Dr Sonali Sarkar
Additional Professor & HoD,
JIPMER, Pondicherry



Dr Amar Shah
Senior Public Health Expert

MODERATOR

Dr Shamim Mannan
Deputy Director, WJCF



Dr Amar Shah: Since TB epidemiology varies across different geographic regions, tailored strategies must be implemented to ensure effective disease control. Planning is the crucial step while doing community wide screening. Creating efficiency for community wide screening is necessary through engagement with communities from the planning stage to get better coverage of screening, preferred effective algorithms that are proven to be efficient and monitor testing and treatment closely need to be utilised. A simple real time digitally enabled management information system is essential in enabling the monitoring of screening including the cascade of care. Pooling human resources and utilising highly sensitive screening tools for multi disease screening could be an efficient way to address issues of affordability.



KEY AREAS FOR FUTURE INNOVATIONS / RESEARCH PRIORITY



01 Low cost tongue swab based precise molecular tests which can bring down the cost and improve efficiency of community wide screening.



02 Integrated multi-disease screening models where many diseases are screened at one go in the community.



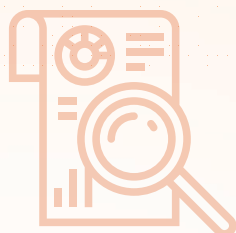
03 Innovative communication strategies to mobilise asymptomatic citizens to undergo screening.



04 Operations research to improve care cascade, improve coverage, optimise operations (no. of X-rays per day per unit) during **community-wide screening**.



From bench to programmatic scale



SUMMARY



There is a need to convert innovative bench research into NTEP so that TB elimination can be accelerated in India. The objective of the panel was to discuss the pathways and steps

Dr. Ranga Chandrashekar first emphasized that significant time is taken to evaluate a new vaccine or a new drug in any clinical trial study. He was also concerned that animal models should be selected carefully in these studies. He suggested that the program must work with innovators from the beginning.

Dr. Archita discussed reasons why only a fraction of all grant based research is actually translated into the program. She discussed reproducibility and repeatability errors due to which basic research often does not get converted into commercial products.

Dr. Kavita Rajshekhar highlighted the evolution of the health technology assessment (HTA) section in ICMR HQ. She told how HTA helped in bringing down the cost of the sickle screening kit from 350 INR to 20 INR. She cited the example of the introduction of safety syringes launched under the immunization program and CyTB testing for tuberculosis after clinical and cost effectiveness studies by ICMR. She added that assessment of portable ECG and malaria screening under the DAMAN project in Orissa was done and now this is included under the program.

MEMBERS



Dr. Ranga Chandrashekar
Joint Drugs Controller (India)
CDSCO



Mr. Sandeep Juneja
Sr. VP - Market Access, TB Alliance



Dr. Raghu Dharmaraju
CEO-AI & Robotics Tech Park
(ARTPARK)



Ms. Archita Chaudhary
CFA, Senior. Manager,
India Health Fund



Dr. Kavita Rajshekhar
Scientist F, Department of Health
Research (DHR)

MODERATOR



Dr. Leyanna Susan George
Scientist E (Medical), ICMR

Dr. Sandeep Juneja emphasized the journey of BPAl regimen in Indian pharmacy. He recommended engagement of multiple manufacturers to scale up the production to meet demand in a cost effective way. He further elaborated mentorship of FDA in launching new drugs in new countries. He said clinical trials should be planned in a way regulatory bodies evaluate a new product and non-adherence to this leads to delaying the approval process.

Mr. Raghu Dharmaraju emphasized the need for building a portfolio of globally recognized AI solutions partnered with Indian MOHFW. AI could be very helpful in building and scaling innovations in the field of TB research.

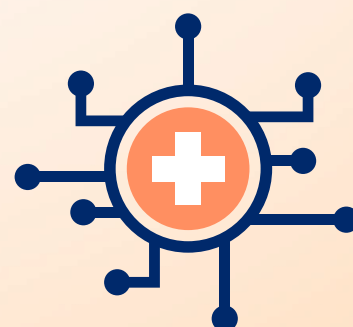


KEY AREAS FOR FUTURE INNOVATIONS / RESEARCH PRIORITY



AI solutions can help in minimizing reproducibility and repeatability errors due to which basic research often does not get converted into commercial products.

It could be very helpful in building and scaling innovations in the field of TB research.



Next Generation Sequencing - Can it solve the problems with the current diagnostics?



SUMMARY



The session aimed to address the current gaps in TB diagnostics, especially for drug-resistant TB, and explore the potential of Next Generation Sequencing (NGS) to address these gaps. The discussion focused on the needs of both clinicians and lab personnel and the feasibility of implementing NGS for improved patient outcomes.

Dr. Camilla advocated for universal drug susceptibility testing (DST) and the need for accessible diagnostics across all regions of India, proposing targeted NGS as a bridge between phenotypic DST and molecular tests.

Dr. Rupak Singla highlighted the challenges clinicians face in treating MDR-TB patients with newer regimens, especially when rapid DST for drugs like Bedaquiline and Linezolid is unavailable. He stressed the importance of timely and accurate DST to prevent treatment failures and improve patient outcomes, particularly in cases of BPaLM regimen failure.

Dr. Siva Kumar explained the advantages of NGS, including its ability to detect mutations beyond LPA hotspots and identify mixed infections. However, he also pointed out the challenges related to turnaround time, cost, and the need for bioinformatics expertise to interpret the large data generated by NGS.

MEMBERS



Prof. Dr. Urvashi B Singh
DDG TB, Central TB Division,
MoHFW, Govt of India



Dr. Rupak Singla
Senior Consultant, Department of
Respiratory medicine, NITRD



Dr Sivakumar
Scientist D and Head Bacteriology
ICMR-NIRT



Dr Camilla Roderigues
HOD Lab Medicine, Consultant
Microbiologist Hinduja Hospital



Dr Sanjeev Nair
Professor, Government Medical
College, Trivandrum



Dr Debasisa Mohanty
Director BRIC-NII,



Dr Ameeta Joshi
Professor & Head,
Microbiology, Grant
Medical College & Sir J J
Hospitals, Mumbai

MODERATOR



Dr. Uma Devi
Scientist D, ICMR-NIRT

Dr. Sanjeev Nair discussed the practical challenges of implementing NGS on a large scale in India, considering the high volume of TB cases. He emphasized the need for cost-effective and user-friendly solutions that can be integrated into existing healthcare systems, and the need for quality control of private sector NGS providers.

Dr. Debasisa Mohant emphasized the critical role of bioinformatics in processing and interpreting the vast amounts of NGS data. He highlighted the need for well-developed pipelines, collaboration between bioinformaticians and domain experts, and the development of Indian specific databases. He also discussed the potential of machine learning and user-friendly tools to enhance NGS data utilization, as well as the need for proper benchmarking and validation of tools.

Dr. Ameeta Joshi stressed the importance of quality control in NGS kits, especially when used for extra-pulmonary samples. She highlighted the need for robust quality checks and clear limitations of the kits to ensure accurate results and build trust in the technology.

Dr. Urvashi Singh provided insights into the program's current integration of NGS, the challenges faced with existing systems, and the plan to roll out targeted NGS in 25 sites for all MDR-TB.



KEY AREAS FOR FUTURE INNOVATIONS / RESEARCH PRIORITY



01 Development of quality assured user friendly **cost-effective NGS/tNGS platforms**

02 Building comprehensive **mutation databases for newer TB drugs**

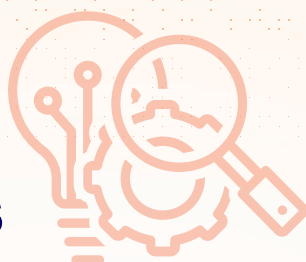
03 Creating **user friendly bioinformatic tools.**

04 Research into **follow up methods and markers for treatment success**

05 Research into the correlation of **genotypic and phenotypic data for newer drugs**



Resources for R&D in diagnostics



SUMMARY



Dr. Hanna Luke Elizabeth highlighted the limited access to high quality diagnosis in rural areas; lack of tests for specific population, eg. paediatric, immunocompromised, unavailability of biomarker based for EPTB and underutilization of novel methods like AI driven x-rays, and integrating the data. She emphasised that a comprehensive approach, strengthening it in the peripheral settings, in special populations, and reception to adopt the latest technologies are essential. A web portal for innovative developments can help innovators, policy makers, regulators and incubators.

Dr. Sarabjit Chadda mentioned that diagnosing Subclinical TB requires AI enabled X-rays, but at present getting an x-ray including the ultra-portable one remains a challenge. tNGS is now available and is able to pick up specific mutations, reducing the costs and moving towards decentralization. Multiplexing is essential across various diseases. Biomarkers have hardly reached the stage yet. Strategies to quickly validate these technologies are required.

Dr. Joy Sarojini M mentioned the support required for innovators from various agencies including funding and mentoring. She highlighted that mentoring and providing funding can occur through public private partnership too.

MEMBERS



Dr. Hanna Luke
Scientist F , ICMR-NIRT



Dr. Sarabjit Chadha
Regional Technical Director, FIND



Dr. Joy Sarojini Michael
Consultant, Gates Foundation



Dr. Manpreet Bhalla
Director, NITRD, Delhi



Dr. Prabha Desikan
Professor, ICMR-BMHR



Dr. Phurpa Tenzin
Director, Public Health, Bhutan

MODERATOR

Dr Neeta Singla
Research Officer (SAG). NITRD, Delhi



Dr. Manpreet Balla said that due to regulatory and administrative barriers retrospective specimens are preferred for testing innovations. Biorepository can be the solution for addressing these with all the relevant background data so that the researchers can concentrate on the index tests alone. Lateral flow POC, can be a self-test like Ag based and can also be non-sputum based. Vaccine incentives can be given to innovators aiming at vaccine development.

Dr Prabha Desikan highlighted that essential regulatory requirements need to be followed by an innovator and there are delays and challenges involved in it. The innovators are expected to follow the procedures and pathways as per the guidelines. The knowledge regarding the process needs to be widely disseminated.

Phurpa Tensin mentioned that multi stakeholder involvement is required to undergo regulatory processes including validation. Point of Care should be implemented at the programme level and be linked with digital health and surveillance systems.



RESEARCH PRIORITY / KEY AREAS FOR FUTURE INNOVATIONS



01 Self Testing using **non-sputum** based specimen at **home**

03 Integrated **technology** and **multiplexing platforms**



02 Identify the **next generation** biomarkers

04 Creating a **biorepository** for innovators





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1.3

PANEL DISCUSSIONS



Innovations in Public-Private Partnership for Ending TB



PANEL
DISCUSSION 1
DAY1

SUMMARY



The panel discussed the innovative steps in the creative opportunities in building and strengthening the public-private partnership for ending TB. All the panellists agreed on innovation, the pipeline, the momentum, the leadership as well as translating this to the operational level and then supporting people affected by TB and beyond, including addressing social determinants and improving the living conditions of the people. Innovations in financing and in particular, outcomes based and delivery based financing in contrast to procurement financing is essential.

Maj Gen (Prof) Atul Kotwal discussed the integration of TB prevention and management at the ground level, facilitated by the Ayushman Arogya Mission. He emphasised the need for locally driven innovations that are effective, cost-effective, safe, and ethical.

Dr Mohammed Yassin discussed the overall support from the Global Fund, for partnerships. Related to public-private partnership, India is transitioning to domestic finance, including blended financing with a World Bank loan, where the Global Fund assisted in scaling up the PPSA model and providing technical assistance. Promoting the private health delivery sector, and incentivizing and engaging them while ensuring accountability of both sectors are essential.

Dr. Cassandra Kelly-Cirino highlighted the public-private partnership models that examine how to assist communities affected in obtaining necessary access and resources at the familial level. She opined that the public-private partnership could be piloted for supply chain management.

PANELISTS



Maj Gen (Prof) Atul Kotwal
Executive Director, NHSRC



Dr Muhammad Yasin
Senior TB Advisor, Global Fund



Dr. Cassandra Kelly-Cirino
Executive Director, The Union



Dr. Ajay Tandon
Lead Economist, World Bank



Dr Jyothi Logani
Scientist F, Department of Biotechnology, Ministry of Science and Technology, Govt of India

MODERATOR

Dr Shibu Balakrishnan
NPO Partnerships, WHO India





Dr. Ajay Tandon highlighted that India successfully partnered with the Global Fund and World Bank using concessionary financing. He mentioned that blended financing models and the buy-down arrangement kind of engagement models are essential. He also said that the financing system should be based on results and use a program for results modality with disbursement linked indicators.



Dr. Jyoti Logani highlighted the establishment of the first pan-India tuberculosis genomic surveillance consortium in partnership between ministries. She also mentioned the plan to gear up to develop a system that can also promote high-end bio manufacturing.

KEY AREAS FOR FUTURE INNOVATIONS / RESEARCH PRIORITY



01 Models that could be built on the accountability of private sector



02 Public-Private Partnerships (PPPs) model for strengthening supply chain management



03 Social insurance, social protection schemes, and insurance mechanisms for people with TB



Can We Make TB Treatment Short and Safe?



PANEL
DISCUSSION 2

DAY1

SUMMARY



The objective of the Session was to explore whether TB treatment can be both short in duration and safe for people with TB and to share insights on the innovations, challenges, and potential next steps to shape programmatic and research priorities.

Dr. Anuj Bhatnagar highlighted that TB treatments have been historically lengthy and has led to high default rates, increased resistance, and severe side effects. A major requirement is the availability of a single, short-duration drug. As an interim, incremental shortening of regimens (fewer drugs, fewer side effects) is crucial to improve adherence and reduce resistance. However balancing the desire for shorter treatments with concerns about relapse, resistance, and durability of cure is essential.

Dr. Narendran Gopalan provided an overview of research in India on shorter TB regimens. He emphasized the challenge of identifying the 5% of patients who need extended therapy, 15% need a six month regimen while the rest can do well with a four month regimen.

Mr. Sandeep Juneja described how DR-TB treatment has shortened from 20 months to around six and envisions a potential one-month universal TB regimen. This relies on combining highly potent new compounds (like TBAJ876) with long-acting injectables.

Dr. Sanjay Kumar Mattoo explained the programmatic realities of implementing new regimens: from procurement and expiry concerns to training and adherence monitoring. He highlighted that rapidly evolving scientific evidence can strain supply chains and require frequent policy updates, but the program remains committed to shorter, safer regimens.

PANELISTS



Dr. Sanjay Kumar Mattoo
Joint Commissioner, CTD, MoHFW



Dr. Anuj Bhatnagar
HoD-Chest and TB, RBIPMT



Dr. Narendran Gopalan
Senior Deputy Director, Scientist F (Med), NIRT Chennai



Mr. Sandeep Juneja
Senior Vice President, Market Access, TB Alliance



Dr. Madhur Gupta
NPO, Pharmaceuticals, WHO



Dr. Sangeeta Sharma
Pharmacologist & Professor, IHBAS



Dr. Vijaya Lakshmi Valluri
Scientist, BMMRC, Hyderabad



MODERATOR

Dr. Sanjeev Nair
Additional Professor, Department of Pulmonary Medicine, GMC Thrissur



Dr. Sangeeta Sharma underscored the role of antimicrobial stewardship in protecting new TB regimens against resistance. Mandatory DST, strict eligibility criteria, and real-time data monitoring can prevent misclassification and misuse of drugs.

Dr. Madhur Gupta stressed the crucial role of pharmacovigilance for newly introduced regimens. Real-world safety data captured through active surveillance and cohort event monitoring, can detect adverse reactions early is what she mentioned. Ongoing collaborations with national programs and the Pharmacovigilance Program of India (PvPI) bolster monitoring and signal detection.

Dr. Vijaya Lakshmi Valluri focused on host-directed therapies and immunological interventions that could reduce relapse rates when regimens are shortened. Therapeutic vaccines and immunomodulators, alongside predictive biomarkers (e.g., T4 levels), may enhance patient outcomes. However, more extensive trials are needed to move from laboratory findings to routine practice.

KEY AREAS FOR FUTURE INNOVATIONS / RESEARCH PRIORITY



- 01** Clinical trials integrating immunomodulators with novel TB drugs
- 02** Host-directed treatments -Exploring therapeutic vaccines, cytokine modulation, and immune augmentation strategies in well-designed clinical trials.
- 03** Expanding real-world data on novel regimens with long-acting injectable and second-generation diarylquinoline (e.g., TBAJ876).
- 04** Identifying the subset of patients requiring extended treatment and tools to identify "hard-to-cure" patients
- 05** Programmatic integration of new regimens (procurement, expiry management)
- 06** Strengthening real world adverse event monitoring
- 07** Translating promising lab research into practical tools
- 08** Antimicrobial Stewardship models tailored for TB care
- 09** Use of real-time data systems (NIKSHAY) for prescription audits, DST tracking, and pharmacovigilance.

Adherence and Patient support



PANEL
DISCUSSION 3

DAY1

SUMMARY



The session aimed to explore key adherence factors, patient support strategies, barriers, and research gaps to drive innovation in ATT adherence.

Dr Sanjay Kumar Mattoo highlighted that treatment adherence is crucial for treatment success and relapse prevention. While DOTS improved adherence, it posed challenges due to loss of daily wages. Fixed-dose combinations (FDCs) have improved treatment adherence by reducing pill burden and ensuring appropriate drug selection.

Dr. Somashekar. N emphasised that a differential care approach is feasible in programmatic settings, identifying individuals at risk for loss-to-follow-up patients, substance use disorders, and addressing ADRs. Brief counseling, continuous monitoring, and integration of mental health can enhance adherence and treatment completion.

Dr Anurag Srivastav discussed ensuring care for migrants as a challenge. Drug adverse event toxicity is not adequately addressed in healthcare settings. Strengthening health care workers' role and empowering CHOs, quality treatment support, and counseling are crucial for building the confidence and trust of patients in the program and help improving adherence.

Dr. Sameer Kumta highlighted that digital adherence tools such as Video DOTS, 99DOTS, MERMS are valuable, but patient and public health staff engagement remains crucial. Integrating adherence data into Nikshay could improve patient prioritization. Urine INH metabolite testing (Iso-screen) offers real-time adherence monitoring but requires programmatic integration. AI presents new opportunities in healthcare but must be implemented with caution to ensure accuracy, privacy, and ethical considerations.

SPEAKERS



Dr. Sanjay Kumar Mattoo
Joint Commissioner, CTD, MoHFW



Dr. Somashekar. N
Former Director, NTI, MoHFW



Dr Sameer Kumta
Senior Program Officer,
Gates Foundation



Dr. Anurag Shrivastava
STDC, Agra,
Uttar Pradesh



Dr. Nusrat Shafiq
Faculty, PGIMER Chandigarh



Mr. Ganesh Acharya
TB Survivor



Dr. Onali Rajapakse
National Programme for
Tuberculosis Control &
Chest Diseases, Ministry
of Health, Sri Lanka



MODERATOR
Dr N Karikalan
Dept. of Social and
Behavioral Research,
ICMR-NIRT

Dr. Nusrat Shafiq discussed the need to address adverse drug reactions to improve treatment adherence. He highlighted that toxicities like ethambutol-induced ocular toxicity require better monitoring. Managing treatment discontinuation due to tolerability remains a challenge, necessitating counseling, support, and targeted interventions. Improved data capture in Nikshay and robust mitigation strategies are essential for optimizing adherence while addressing drug-related adverse effects.

Mr. Ganesh Acharya highlighted that stigma is a direct impediment to adherence and treatment, patient stories can be motivational to newly diagnosed patients and empathy can help improve adherence, especially in populations like women, underprivileged people, and minority populations.

Dr. Onali Rajapakse described that in Sri Lanka, adherence is higher post-health system access, but comorbidities, financial constraints, wage loss, and stigma hinder outcomes. Key strategies to improve treatment adherence include health education, adherence counseling, caregiver involvement, risk assessment for loss to follow-up, and patient empowerment. Post-COVID-19, sustained social support, risk identification, grassroots efforts, nutritional supplementation, and financial support have been crucial in improving adherence.



CRITICAL CHALLENGES REQUIRING INNOVATIVE SOLUTIONS



01 Non-availability of FDC for DR-TB.

02 Lack of first-line mental health care for TB patients with mental health morbidity.

03 Gaps in measuring adherence to drug tolerability and monitoring of drug side effects.

04 Need for systematic integration of TB survivors in the program.

05 Need for compassionate communication and differential care for vulnerable populations specifically for patients with alcohol use disorder diabetic patients.



KEY AREAS FOR FUTURE INNOVATIONS / RESEARCH PRIORITY



01 Implementation research to **integrate mechanisms to monitor tolerability and involvement of family members and HCW** for imparting health education and counselling to minimize dropouts.



02 Implementation research to **evaluate and integrate point-of-care biomarker test** (eg Urine INH) testing to measure adherence.



03 Implementation research to develop **evaluate and integrate AI chatbots** for monitoring and improving adherence.



04 Feasibility and **cost-effectiveness analysis of digital adherence technologies** (EG MERM, Video DOTS).



05 Developing compassionate communications modules for doctors to **improve patient acceptance and self-efficacy**.



06 Development of **guidelines for palliative care** for people with TB and evidence-based integration into the program.



07 Implementation research to **integrate patient champions and survivors** in the program for improving treatment adherence.



Innovations in Multi-Sectoral Engagement



PANEL
DISCUSSION 4

DAY1

SUMMARY



The session aimed to explore innovations in multi-sectoral engagement and the role of various stakeholders, including private sectors, civil society, and government bodies, in addressing challenges and gaps in public health programs, particularly focusing on tuberculosis (TB).

Dr. Nishant Kumar highlighted the success of reaching out to various sectors including private health partners, other ministries, corporate sector, civil society etc. he mentioned that MoUs for collaboration have already been signed with various ministries and specific actions plans and its implementation is in progress.

Dr. Jyoti Jaju described the Corporate TB Pledge under the iDEFEAT TB project, which successfully mobilized over 400 corporates, unlocking nearly \$7 million USD for additional NAAT machines, mobile vans, and nutrition kits. Corporate sector not only brings resources but their reach as well in communities and workers she mentioned. Despite TB not being a traditional focus for corporate funding, innovative strategies helped attract CSR investments. The approach emphasized making corporate contributions impactful, ensuring that every investment added value.

Dr Shibu Balakrishnan discussed the need for exploring accountability-based models for Public Private Partnership to ensure sustainability of the partnerships. In such models, private sectors assume accountability to undertake certain tasks, one such example is STEPS model where private hospitals assume accountability to ensure standards of TB care to all the clients reaching them. He also emphasised the need to organise the diverse private health care service sector for easy engagement.

PANELISTS



Dr Nishant Kumar
Joint Director, CTD, MoHFW



Dr Jyoti Jaju
Director Programs, The Union



Dr Shibu Balakrishnan
NPO Partnerships, WHO India



Dr. Charudutta Panigrahi
President, FIDR



Dr. Sandeep Sharma
CGM, IOCL



Dr Upasana Arora
Managing Director, Yashoda
Super Specialty Hospital

MODERATOR

Mr. Mohd Shadab
Head Partnerships,
The Union



Dr Upasana Arora emphasized the importance of sensitisation of non-healthcare entrepreneurs, and highlighted a model of workplace interventions in factories. She emphasized that right advocacy can result in organisations screening their own workforce. "TB MukhtAbhiyaan" is an opportunity to mobilise and engage a diverse set of stakeholders

Dr Sandeep Sharma highlighted that IOCL covers 7,00,000 individuals including employees, family members, and contract workers for TB screening. They leveraged technology through the TB Mukht Parivaar App, enabling self-screening and systematic symptom tracking. The initiative was executed in three phases—first covering employees and dependents, then extending to contract workers through a system-based entry, and finally reaching delivery personnel via specialized software and team-based responsibility.

Dr Charudatta Panigrahi while discussing the need to intensify innovation in policy and implementation highlighted the need to strengthen district and sub-district leadership. Regular meetings at the district level and better utilization of CSR funds and District Magistrate Funds (DMF) for PHCs and CHCs are crucial. Collaboration with Rural Development and Panchayati Raj Ministries is essential for expanding TB outreach efforts. Strengthening primary healthcare infrastructure in rural areas will improve early TB detection and treatment adherence.



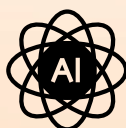
KEY AREAS FOR FUTURE INNOVATIONS / RESEARCH PRIORITY



- 01** Research is needed to assess the impact of **CSR-driven TB programs** and **optimize corporate engagement strategies**.



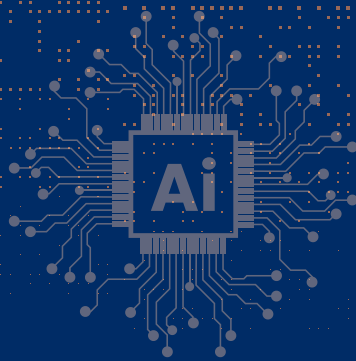
- 02** Research should explore **cost-effective TB screening models in workplace settings**. **Artificial intelligence (AI) and digital health tools**, such as mobile applications for self-screening, should be further studied for scalability and effectiveness.



- 03** **Models based on accountability of private sector such as STEPS** needs to be documented and scaled up.



Future of Artificial Intelligence in TB Elimination



**PANEL**
DISCUSSION 5

DAY1

SUMMARY



The objective of the panel discussion was how Artificial intelligence(AI) could be utilized in the TB Elimination.

Dr. Ajit Patil In his talk he highlighted that the accuracy of the AI based X-Ray reading drifted from machine to machine and also varied from person to person especially with changes in age and body weight. He highlighted the need for a responsive AI model that needs to be tuned for an easy interface.

Dr. Shibu Vijayan mentioned that even easy tests like ESR, radio-diagnosis and bio-marker can utilize AI for TB detection as a composite package. He highlighted that tapping the wealth of data in Nikshay through AI can give many insights for epidemiology and program management. He also highlighted the need to identify the scale up strategies for existing innovations.

Dr. Aparna Chaudhary shared experience with the Line Probe Assay AI reader for first and second line anti-Tb drug resistance. She mentioned that the end user’s insight is important to begin with technology. She also highlighted the need for developing standard data sharing policies.

Dr. Kiran Rade mentioned that the traditional approach need not be taken to bring in innovation with potential impact and disruptive thinking is needed. He highlighted that access to information and anonymised databases are necessary for developing new technologies. High level statistical analysis is useful, but data is humongous, to handle this data AI & ML is required to understand different patterns.

SPEAKERS



Dr Kirankumar Rade
International Technical Consultant,
Stop TB Partnerships



Ms. Nidhi Bansal
Country Director. The Union



Dr. Shibu Vijayan
Chief Medical Officer, Qure.ai



Dr. Aparna Chaudhary
Program Manager, Wadhwani AI



Dr. Ajit Patil
Co Founder, DeepTek

MODERATOR

Dr Manu Easow Mathew
Deputy Director, The Union



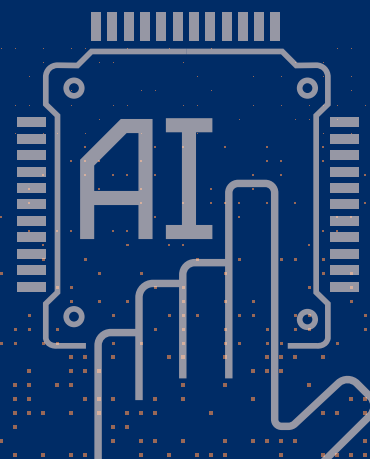
Ms. Nidhi Bansal stated that The Union helps in validating the solutions in real life situations. The Union is planning to maintain a live atlas with details of all innovations in various stages, guide innovators and help in linking innovators to donors and programs.



KEY AREAS FOR FUTURE INNOVATIONS / RESEARCH PRIORITY



AI can be attempted to routinely analyse the wealth of program data and provide insights



Using Information for Decision Making - How to improve efficiency?



PANEL
DISCUSSION 6
DAY1

SUMMARY



The primary aim of the discussion was to explore how information and data generated through various health system platforms can be effectively utilized for decision-making to enhance efficiency in tuberculosis (TB) programs. The conversation focused on improved data accessibility, integration across sectors and the possibility for states to modify and download their data while stressing the importance of respecting patient data ownership.

Dr. Garg outlined the key elements of the National TB Program's monitoring and evaluation system, including the "Monitoring and Supervision Framework" and the National Strategic Plan. He emphasized the importance of core variables in data collection platforms, along with additional state-specific variables, and how states can modify and add data as the Mixture system evolves. He also stressed the need for a patient-centered approach, where health data should belong to the individual. He highlighted ongoing efforts to integrate Health Records Systems (HRS) and Electronic Medical Records (EMRs). A significant gap identified was the lack of documentation on undernutrition rates in TB patients, despite its considerable impact on TB-related deaths.

Dr. Kiran emphasized the importance of integrating non-core data, such as comorbidities and socioeconomic indicators, to better predict adverse outcomes in TB patients. He highlighted that digitalization and data consolidation would reduce duplication and ease the burden on healthcare workers, ultimately improving decision-making. Dr. Kiran also stressed the need for improved coordination across health sectors and the use of AI and geo-mapping for real-time decision-making. A key gap identified was the need for stronger coordination between health and non-health sectors.

PANELISTS



Dr Vinay Garg
Deputy Commissioner TB, CTD



Dr Kirankumar Rade
Consultant, Stop TB Partnerships



Dr Shamim Mannan
Deputy Director, WJCF



Dr Bhavin Vadera
Public Health Expert



Dr Deepak Balasubramanian
Deputy Director TB - South Asia, PATH



Dr. Hitesh Verma
STO, Haryana

MODERATOR

Dr Hemant D Shewade
Scientist E (Medical), ICMR



Dr. Shamim focused on the integration of various data sources, such as geospatial, mobility, and environmental data, to predict disease outbreaks. He highlighted the potential of wearable devices in collecting more accurate health data and enhancing monitoring efforts in a comprehensive manner. A key challenge discussed was the integration of diverse data sources and ensuring their compatibility for effective disease monitoring.

Dr Bhavin Vadera discussed the shift in development sector projects towards dynamic and agile monitoring and evaluation (M&E) systems. He emphasized the importance of continuous documentation, learning, and research to improve the effectiveness of interventions. Bhavin also highlighted the scalability of these approaches, especially in scaling up interventions where data systems and quality control are more robust. However, he identified the challenge of maintaining data integrity at lower levels when scaling interventions.

Dr. Balasubramanian discussed the importance of building local capacity for data-driven decision-making and highlighted ongoing efforts to create a unified TB management platform. He emphasized the integration of data across various health programs and the critical need to decentralize data entry to local levels. By sharing examples from India and Vietnam, where over 400 staff have been trained to make data-driven decisions, he illustrated the benefits of scaling decentralized data platforms for broader implementation.

Dr. Hitesh Verma shared his experience from Haryana, where a successful three-pronged approach significantly improved TB detection rates. This approach involved training local staff and using mobile sample collection, leading to higher case detection and notification. He emphasized the role of operational and implementation research in informing day-to-day decisions and enhancing the overall effectiveness of the TB program. However, he noted the ongoing challenge of ensuring data accuracy at the grassroots level, where target-driven pressures can influence the quality of data.

KEY AREAS FOR FUTURE INNOVATIONS / RESEARCH PRIORITY



01 To improve **data integration across sectors** to enhance decision-making and streamline TB program operations. The need for a unified platform that integrates various data systems for **more effective TB management** and to **streamline coordination across sectors**.

02 **Patient-centered model** where individuals control their health data.

03 **AI, geo-mapping, and wearable devices** in improving TB detection and real-time decision-making.

04 Diverse **data sources, such as geospatial, mobility, and environmental data**, are compatible with data systems and can be used for **comprehensive disease monitoring**



Innovations in Capacity Building

PANEL
DISCUSSION 7

DAY1

SUMMARY



Objective of the session was to discuss the innovations that can be used in capacity building of the TB workforce.

Dr. Arun Kumar Jha discussed mobile application based training as a solution for training a large number of workforce. He highlighted that the certification of skill is important.

Dr. Dharmendra Kumar Yadav described the SAKSHAM portal developed by the National Institute of Health & Family Welfare for training of health care functionaries. Email based login to LMS poses a challenge in the field, especially training of health volunteers and ASHA, needing to shift to mobile OTP based log in .

Dr. Vinay Garg highlighted that through the SAKSHAM portal more than 20,000 workforce across the country were trained as part of “100 days campaign”. The Learning Management System could be accessed through mobile phones which helped in reaching to the large number of workforce within a short span of time. Quantification of capacity building needs is a challenge. He also highlighted that NTEP training system (www.ntep.in) has been modernised through systems for updatable, reusable, multimedia, multilingual content creation resulting in cadre wise courses and standardised operations for hybrid mode training incorporating in-person and virtual and self paced and instructor led training.

Dr. Manu Mathew emphasised that AI tools can be used to understand training needs with change of guidelines and can inform the changes needed in course content.

PANELISTS



Dr. Arun Kumar Jha
Former EA



Dr Vinay Garg
Deputy Commissioner TB, CTD



Dr. Dharmendra Yadav
Assistant Professor, S&D, NIHFV



Dr Manu Easow Mathew
Deputy Director, The Union



Dr Sanjeev Lavania
Director-STDC UP



Dr Debadutta Parija
Director, Programs, Jhpiego.

MODERATOR

Dr. Abhimanyu Singh
National Consultant, The Union





Dr. Parija explained about project NISHTHA and the training of TB champions undertaken through the LMS.

Dr. Sanjeev Lavania : Training large manpower in the traditional way is very difficult. Modernizing training system by NTEP was essential and Modernised Training Units established at State TB Training and Demonstration Centres have helped in integrating modern methods/gadgets for training operations. Monitoring the capacity building is required for which Training Information Management System can help.

KEY AREAS FOR FUTURE INNOVATIONS / RESEARCH PRIORITY



01 Quantification of need through a **Training Information and Management System** is vital and will help in planning and monitoring



02 Scenario based **training using simulations techniques** may be attempted.

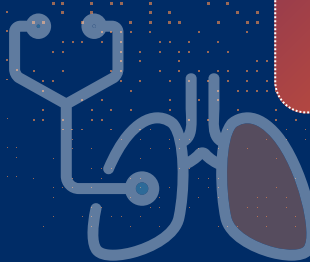


03 **AR and VR techniques** are still not tried in the capacity building domain.



Point-of-Care Testing Vs Centralized Assays for Tuberculosis Testing – Suitability for India

PANEL
DISCUSSION 8
DAY 2



SUMMARY

The Objective of the session was to discuss Point-of-Care (POC) Testing and Centralized Assays for TB Diagnosis and suggest recommendations for further enhancing diagnostics.

Dr. Nishant Kumar highlighted that while current platforms in the program are termed as “near point-of-care,” they are not truly POC. He explained about the roll out of molecular tests from 121 machines in 2015 to 8,450 machines currently, conducting over 10 million molecular tests annually. He also described the NTEP’s wish of decentralizing diagnostic platforms by moving the diagnostics closer to the community at Health and Wellness Centre centres He emphasised on the ask for lowering the cost of diagnostic tests to enhance accessibility. Centralised testing has the risk of sample loss and delays during transportation. He suggested a hybrid approach, complementing decentralized models with high-throughput centralized machines for resource optimization.

Dr. Gautam Wankhede stressed the importance of innovation in diagnostic platforms to improve sensitivity and specificity. He suggested exploring AI-based technologies to reduce human error and improve result interpretation.

Dr. Sriram Natarajan emphasized the need for indigenous manufacturing and innovation to reduce dependency on imported diagnostic kits and suggested scaling up of point-of-care molecular platforms with simplified protocols for use at peripheral health centres.

PANELISTS



Dr Nishant Kumar
Joint Director, CTD, MoHFW



Dr Amita Jain
Department of Microbiology, Dean faculty of medical sciences KGMU



Dr Ameeta Joshi
Professor & Head, Microbiology,
Grant Medical College & Sir J J
Hospitals



Dr Sriram Natarajan
Director and CEO of Molbio
Diagnostics Pvt. Ltd



Dr Shesheer Kumar
MD, Founder Director
Huwel Lifesciences



Dr Gautam R. Wankhede
Director - Medical Affairs,
Mylab Discovery Solutions

MODERATOR

Dr. Siddharth Giri
Scientist F, ICMR-RMRC,
Bhubaneswar





Dr. Sesheer Kumar highlighted the importance of high-throughput machines for centralized settings to manage high sample loads efficiently. He also suggested that open RT-PCR based tests can use 3,300 available open RT-PCR machines in the country to enhance diagnostic capacity. He also suggested establishing quality control mechanisms to ensure uniformity in results across different platforms.

Dr. Amita Jain recommended integrating diagnostics with digital health platforms to improve patient monitoring and data management. She emphasized the need for training and capacity building of laboratory personnel for maintaining quality standards.

Dr. Ameeta Joshi highlighted the importance of affordability in molecular testing for sustainability in the long run. She emphasised the need for regular technology assessments and pilot projects before widespread implementation.

KEY AREAS FOR FUTURE INNOVATIONS / RESEARCH PRIORITY



01 Expanding point of care platforms to **Health and Wellness Centres**



02 Promote research on **alternative sample types (eg tongue swabs)** to improve diagnosis



03 Need for **operational innovations on sample collection and transportation** maintaining quality and turn around time



Sample Collection & Transportation - Need for Innovations

PANEL
DISCUSSION 9

DAY 2

SUMMARY

The objective of the panel was to discuss innovations in sputum collection and transportation in ensuring timely and accurate TB diagnosis and explore research priorities. The discussion focused on identifying innovative, scalable, and cost-effective solutions to improve access, timeliness, and reliability in sputum sample handling.

Dr. Ranjani Ramchandran highlighted that transporting of samples often faces major challenges especially culture-based tests which need storage below 25°C. Logistical barriers include reliable transport to headquarters but poor connectivity in remote areas. Post offices are not an option due to biohazard risks, highlighting the need for district-specific solutions. Poor container quality further risks sample integrity. Furthermore, extrapulmonary samples like soft tissue and CSF require immediate transport.

Dr. Bharati Kalottee emphasized that TB sample transportation faces logistical issues and struggle due to the lack of courier services, particularly in remote areas. She also highlighted the importance of ensuring that clients and healthcare practitioners receive timely updates on sample status after submission.

Dr. Sachin shared insights on how QR code automation and digital record-keeping have significantly improved the TB sample transportation process. He highlighted that the Nikshay app, which connects collection points to laboratories and healthcare facilities can be used for real time tracking and will reduce delays and human errors in record-keeping.

PANELISTS



Dr Ranjani Ramchandran
WHO NPO India



Dr Bharati Kalottee
Director Program, The Union



Dr Naveen Shah
Senior Intervention Pulmonologist
NTCC, Nepal



Dr Sachin Gupta
Lead State Operations, Path



Ms. Amy Stedman
Project Leadership and
Senior Scientist at GH Labs

MODERATOR

Dr. Sriram Selvaraju
Scientist E, ICMR



Dr. Navin Shah discussed the geographical challenges in Nepal, where 80% of the terrain is hilly, making TB sample transportation difficult and unreliable. Due to limited laboratory facilities, samples often have to travel long distances, increasing the risk of degradation and contamination. While drone technology has been explored as a potential solution, challenges such as air pressure limitations and unpredictable weather conditions hinder its widespread implementation. Additionally, maintaining proper sample storage temperatures remains a significant concern, as thermocol boxes often fail under extreme climate conditions.

Ms. Amy Steadman touched upon global innovations like TB detection kits that can maintain sample stability for up to 30 days, addressing delays in transportation, especially in remote areas but need further research. Additionally, she spoke about BiomLife, a specialized preservation medium for sputum samples, which improves sample viability and reliability for testing. These innovations present significant opportunities for strengthening TB diagnostics by mitigating logistical barriers and ensuring better access to timely and accurate results.

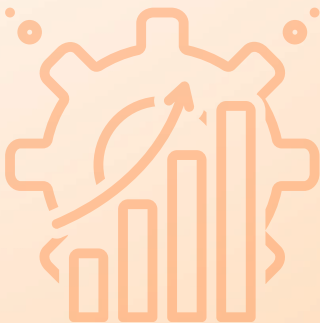


KEY AREAS FOR FUTURE INNOVATIONS / RESEARCH PRIORITY



Suggested exploring **public-private partnerships by engaging private delivery networks to facilitate sample transportation.**

Review and update **the hub-and-spoke model to enhance coverage, efficiency, and cost-effectiveness**



Catalysing Paediatric TB Innovations



PANEL
DISCUSSION 3
DAY 2

SUMMARY

The session focused on catalysing innovations in paediatric TB, particularly addressing early diagnosis, diagnostic capacity enhancement at different healthcare levels, treatment challenges, and drug formulation available for children.

Dr. Sathish Kumar Angappan highlighted the diagnostic capacity gaps at secondary and primary healthcare levels. He also emphasised the need for multiple integrated tools rather than relying on a single innovation. A technology-based job-aid for the field workers could be helpful.

Prof. (Dr.) Varinder Singh highlighted the diagnostic capacity gaps at secondary and primary healthcare levels. He also emphasised the need for multiple integrated tools rather than relying on a single innovation. A technology-based job-aid for the field workers could be helpful.

Dr. Aishwarya Venkataraman discussed the validation and deployment of new diagnostic tools and implementation of biopsychosocial interventions in children and adolescents. She also highlighted the lack of timely approval and deployment of novel diagnostic tools.

Prof. (Dr.) Sangeeta Sharma spoke about the paediatric TB treatment barriers and challenges in conducting clinical trials. She emphasized the need for a paediatric TB research consortium to expedite research and regulatory processes.

Dr. Sushant Mane focused on innovations in TB drug formulation and delivery mechanisms. He highlighted recent advancements in paediatric TB drug formulations to improve adherence.

PANELISTS



Prof. (Dr.) Sangeeta Sharma

Head, Dept. of Pediatrics,
NITRD Delhi



Prof. (Dr.) Varinder Singh

Director and Professor of
Paediatrics, Lady Hardinge
Medical College, Delhi



Dr. Aishwarya Venkataraman
Scientist E (Medical) ICMR -NIRT
Chennai



Dr. Sathish Kumar
Country Director of SAATHII



Dr. Sushant Mane
Associate Professor & Nodal
Office, Grant Medical College
& Sir J J Hospitals

MODERATOR

Dr. Balaji Ramraj
Scientist E (Medical),
ICMR-NIRT, Chennai





RESEARCH PRIORITY / KEY AREAS FOR FUTURE INNOVATIONS



01 Need for strengthening **clinical trial frameworks for paediatric TB drugs**. Need for **establishing a Paediatric TB Consortium** to fast-track research, approvals, and implementation.

02 Use of **AI and molecular-based diagnostics** in primary and secondary healthcare levels.

03 Development of **paediatric-friendly drug formulations and delivery mechanisms** for TB.

04 Strengthening **multi-tool integrated approaches** for screening and diagnosis.

Strengthening the Private Health System for Ensuring STCI



PANEL
DISCUSSION 10

DAY 2

SUMMARY



The session highlighted the innovations in private sector engagement in ensuring standards of care in TB diagnosis, treatment and social support following a multi-sector accountability framework.

Dr. Vinay Garg, CTD: Private sector is the first stop for TB care for many people with TB. NTEP's vision is that every citizen is entitled to receive standard TB care based on a provider of his /her choice. NTEP has established sustainable bridges with the private sector to ensure quality of care through various mechanisms, PPSA being one of them.

Dr. Narin Sehgal: He shared his experience on intensified case finding from a private hospital in New Delhi. He highlighted how the private sector is assuming responsibility to ensure standards of TB care to all clients reaching them. All clients coming to OPD are now being screened for 10 symptoms of TB based on a QR code based form and subsequently referred to the concerned specialist, for further investigations. All people diagnosed with TB are notified on NIKSHAY portal and are provided treatment adherence support through STEPS centre and are enrolled for various social benefit schemes. The center is staffed by trained personnel. All departments including labs and pharmacists are linked to the STEPS centre for providing care.

Dr. Sunil Khetrapal: He shared the experience of AHPI and its efforts to organize the private sector by establishing city level and national level consortiums for ensuring standards of TB care and making the private sector a part of the journey of TB elimination in India as an equal partner through establishing STEPS (System for TB Elimination by Private Sector).

PANELISTS



Dr Vinay Garg
Deputy Commissioner,
CTD, MoHFW



Dr Narin Sehgal
Medical Director & HOD, Sehgal
Neo Hospital



Dr Sunil Khetrapal
Director, AHPI



Dr Vijayasree Yellappa
Global PPM Vice Chair



Dr Artawan Eka Putra
Senior plenary, Universitas
Udayana, Putra, Indonesia



Dr. Ashish Kumar Prakash
Associate Director, Respiratory
& Sleep Medicine, Medanta

MODERATOR

Dr. Rakesh PS
Deputy Director, The Union



Dr Sunil highlighted AHPI has established regional consortiums in UP, Delhi and Haryana, as well as a National Consortium, for mobilization and engagement of private hospitals for having a unified approach towards TB care. Such a consortium enables the NTEP to communicate directly with the leaders in the private sector.

Dr. Artawan Eka Putra: The speaker shared the experience of the unique DBPPM model (District based Public Private Mix) in Indonesia for involvement of the private sector in TB control. The DBPPM involves mapping of health facilities in the area and engagement of potential private health facilities including poly clinics, hospitals, laboratories, private practitioners etc. and giving them access to rapid diagnostics tests. Such facilities are required to report all presumptive cases and refer for diagnosis. Indonesia also profiles the capacities of various providers and ensures all are competent to provide the standard TB services through training.

Dr. Ashish: Medanta’s journey that started in 2014 with a pilot project in Rewari with a mobile van with handheld X ray machine for TB screening. Since 2015, under mission TB Free Haryana, more than 80,000 X-rays have been done and 8,000 to 10,000 cases have been diagnosed. As an impact of their efforts, TB case notification has increased 3 times. It highlights how the private hospital has mobilized money from various sources for intensified screening in the community. It shows the commitment of the private sector to go outside the hospital into the community for TB screening.

Dr. Vijayasree Yellappa, KNCV: She mentioned that for optimal private sector engagement, a technology can be developed to undertake a systematic landscaping of the private sector both at the national and subnational level that would be visualised GPS coordinates and available on a single click. It can be augmented with an AI enabled tool that can prioritize the private sector that can help the administrators and management to make informed decisions. A dedicated, real-time TB dashboard can be made available at the district and sub-district level. The private sector has the potential to influence public policies, such as inclusion of TB in insurance packages, or TB-friendly workplace policies, or tax incentives for TB treatment.



KEY AREAS FOR FUTURE INNOVATIONS / RESEARCH PRIORITY



Technological innovations, **such as AI-driven tools for mapping private sector resources,** were proposed to **optimize engagement and decision-making for administration.**



Care Beyond Medical Management of TB



PANEL
DISCUSSION 1 1

DAY 2



SUMMARY

To discuss the developments in the management of TB beyond anti-TB drugs focussing on pulmonary rehabilitation and palliative care.

Dr. Sanjay Kumar Mattoo emphasized that the National TB Elimination Program (NTEP) should address not only physical but also emotional and psychological aspects. A holistic approach is necessary, incorporating rehabilitation, psychological support, and patient education. NTEP is in the process of finalising the guidelines for pulmonary rehabilitation and palliative care for people with TB.

Dr. Vishal Bansal proposed initiating rehabilitation and palliative care services as soon as anti-TB treatment begins. This includes referring patients to rehabilitation centres or providing training for at-home breathing exercises. He also shared an ongoing study evaluating home visits as an alternative to supervised rehabilitation, including telemedicine follow-ups to assess the program's impact on patients' quality of life and functional capacity.

Dr. Sanjeev Nair highlighted the difficulties in decentralizing rehabilitation and palliative care to Primary Healthcare (PHC) levels, especially for respiratory diseases. He cited Kerala's SWAAS model as an example of integrating respiratory care, emphasizing the need for post-treatment rehabilitation for TB and other respiratory diseases. He pointed to the need for greater awareness and education within the Panchayati Raj system and local healthcare providers about the importance of palliative care and rehabilitation for TB patients.

PANELISTS



Dr Sanjay Kumar Mattoo
Joint Commissioner CTD, MoHFW



Dr Rajani Bhat
Pulmonologist, Sparsh Hospital



Dr Vishal Bansal
Director-Professor and HOD
Physiology, VPCI



Dr Rajam K Iyer
Consultant P.D. Hinduja Hospitals



Dr Sanjeev Nair
Professor, Government
Medical College, Trivandrum



Dr P. M. Ramesh
Prof & HOD,
GHTM Tambaram,

MODERATOR

Dr Meera Bhatia
National Consultant
The Union



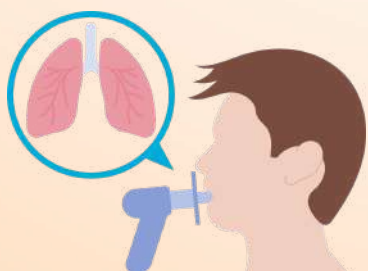
Dr. Rajani Bhat discussed the “Breathe India” model, which involves simple, low-resource interventions such as handheld fans and educating family caregivers on managing respiratory symptoms at home. She mentioned ethical concerns that arise regarding palliative medicine in an infectious yet curable disease, particularly around antibiotic use and drug resistance.

Dr. Rajam Iyyer added that a holistic approach, addressing both the physical and psychosocial aspects of care, is essential for chronic respiratory diseases like TB. She also emphasized the need to normalize opioid use for palliative care, addressing the misconception that opioids lead to misuse. Training doctors to prescribe opioids confidently is vital for effective symptom management.

Dr. P.M. Ramesh discussed vocational rehabilitation initiatives for post-TB patients, focusing on supporting them through income-generating projects and family welfare at GHTM Tambaram. He also mentioned the “Wings of Support” project which helps by providing caregiver counselling and managing fears of infection.



KEY AREAS FOR FUTURE INNOVATIONS / RESEARCH PRIORITY



Implementation models for
pulmonary rehabilitation and
palliative care for people with TB





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2

EXHIBITION OF INNOVATIONS





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2.1

EXHIBITION OVERVIEW

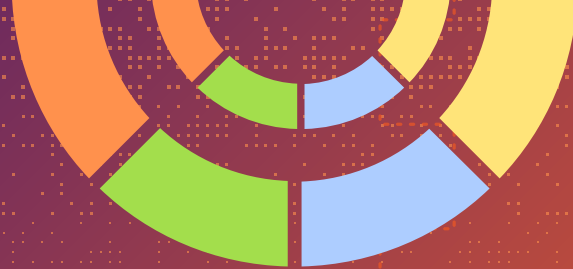


The Innovation Exhibition highlighted a diverse range of innovations aimed at strengthening the TB care cascade—**Detect, Treat, Prevent, and Build**. Selected through an open call and rigorously vetted by a scientific committee convened by ICMR, the showcased innovations spanned various stages of development, from early concepts to scale-ready solutions.

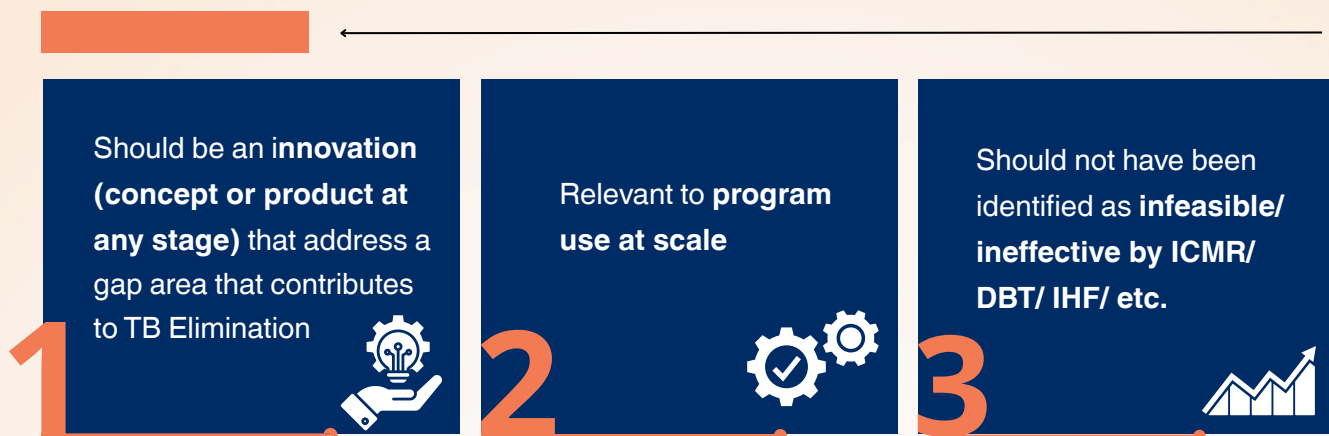
Presented through posters, exhibits, and live demonstrations, these innovations reflect the growing momentum toward scalable, program-relevant approaches in India's journey to eliminate TB.



The Exhibition



The Exhibition showcased innovations that support the various parts of the TB care cascade and solve different problems in the TB programme. A total of 349 unique innovations were submitted in response to an open call for submissions of abstracts, for inclusion in the exhibition. These submissions were screened with the following inclusion criteria:



ICMR constituted a scientific committee to oversee the screening process and vet the finally selected innovations. The committee included experts from research institutes, regulatory authorities, industries, government programmes, and funding agencies. They screened all the submissions and finally 233 innovations were selected for exhibition.

The selected innovations were finally organized based on the intended use under the categories of Detect, Treat, Prevent, and Build. These innovations were also classified based on their stage of maturity as below:

- **Pending scaleup** - Should have achieved feasibility and scaleup demonstration
- **Product** - Should have achieved product level for implementation pilots/ Testing - from any existing db of innovations by incubation platforms
- **Concepts** - Should have achieved proof of concept

These innovations were presented by means of posters, exhibits and demonstrations, depending upon the type of innovation. Exhibits were used in cases where their product, tool, processes or kits could be showcased using various media. Demonstrations were used where the tools or the workings of an innovation could be showcased by physically demonstrating them live. Posters were used in cases where the innovation was at a concept/ ideation level, or could not be exhibited or demonstrated.



MAP OF INNOVATIONS



Detect



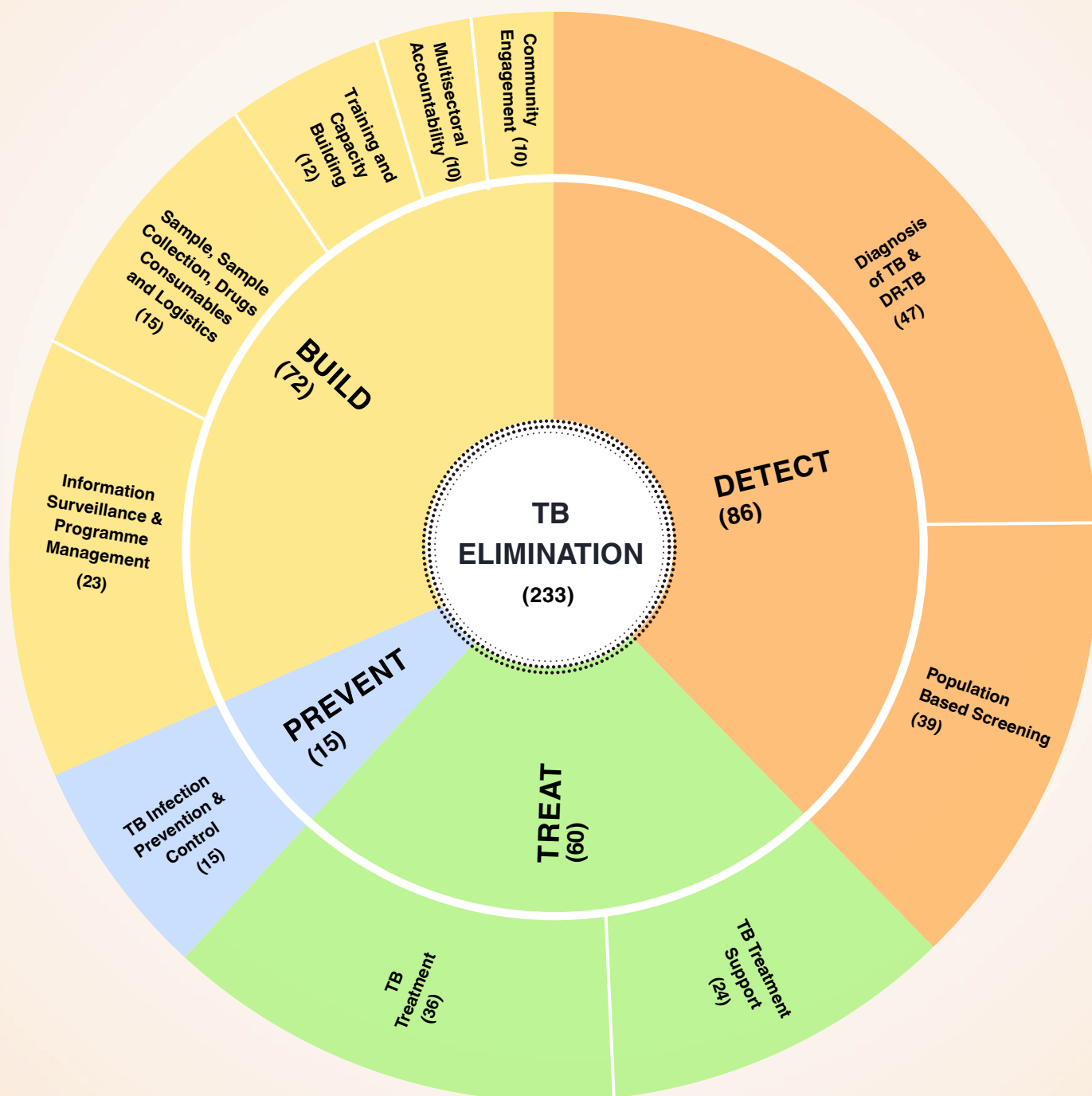
Treat



Prevent



Build



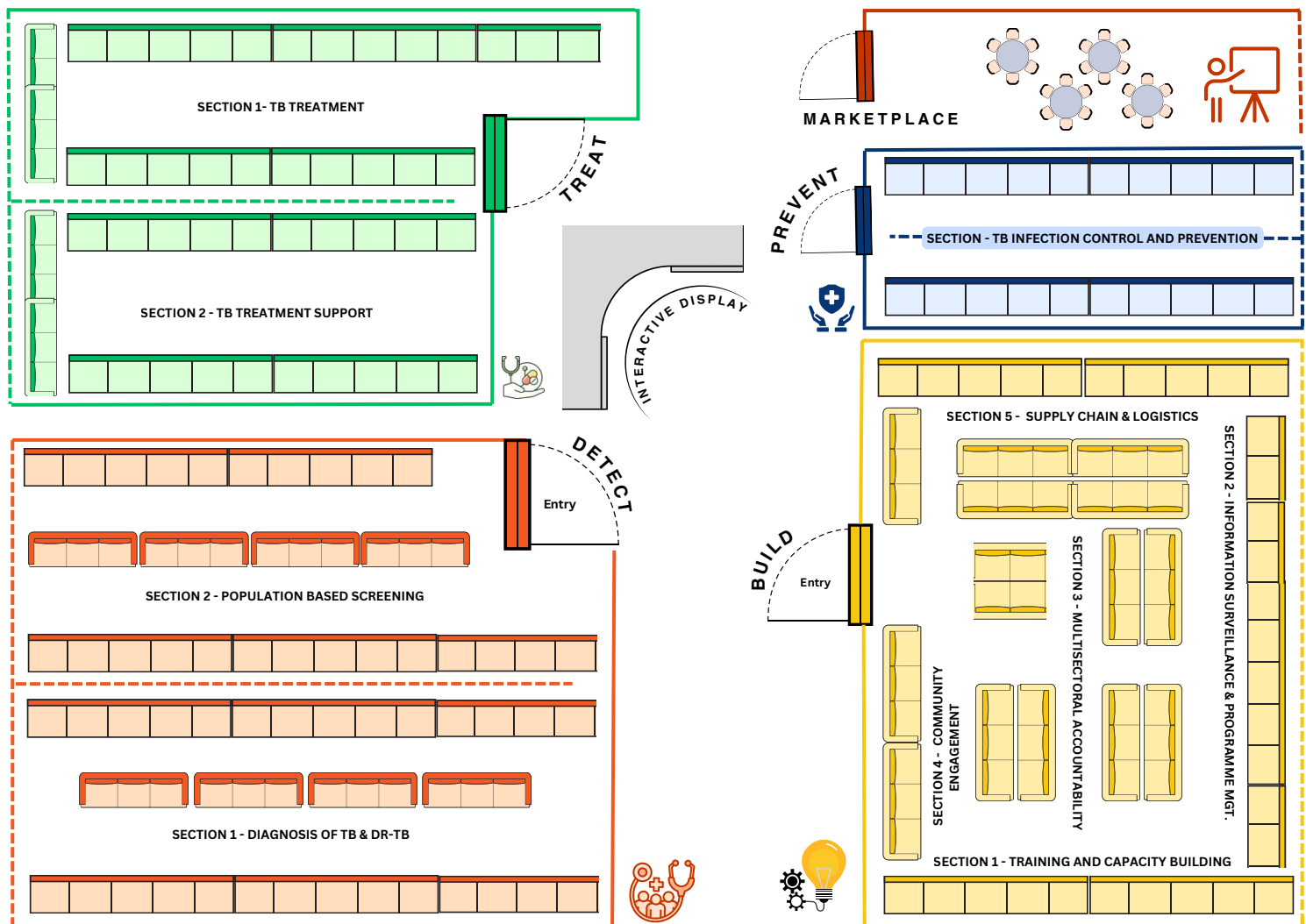
EXHIBITION LAYOUT

At the exhibition these innovations were exhibited in four arenas, one for each of the categories of

“Detect, Treat, Prevent & Build”.

Depending upon the intended use case and similarities between the innovations, they were also grouped and presented together in ten innovation classes. The exhibition also hosted a dedicated Marketplace, where the innovators with a market ready product could make pitches to potential partners, funders and customers about their product.

LAYOUT



DETECT



SUMMARY



This category of innovations solved problems in the TB case finding theme and dealt with processes ranging from TB screening to final diagnosis of TB and DRTB. Under this category, 86 innovations were exhibited.

THE INNOVATIONS IN THIS CATEGORY WERE EXHIBITED IN TWO CLASSES AS FOLLOWS:

01

DIAGNOSIS OF TB AND DR-TB (47 INNOVATIONS)

Included new rapid molecular tests (24), next-generation sequencing (NGS) technologies (9), AI-based result readers (3), microscopy improvements (5), telepathology solutions, and paediatric TB screening approaches.



02

POPULATION BASED SCREENING (39 INNOVATIONS)

Featured AI-based respiratory sound analysers, handheld X-rays, AI-CAD systems, PPE-based screening methods, integrated operations models, and self-screening tools.



These innovations were presented in **26 Posters**, **25 Exhibits** and **34 Demonstrations**. Posters presented included diagnostic prototypes, and innovative screening algorithms; exhibits included diagnostic tools and platforms through screens and presentations. Demonstrations included functional equipment such as handheld X-ray devices, molecular diagnostic machines, and AI-integrated tools showcased physically with video explanations.



TREAT



INTRODUCTION



This category included novel solutions in TB treatment and treatment support and included 36 innovations.

KEY THEMES INCLUDED:

1

TB TREATMENT (36 INNOVATIONS):



Covered new drug formulations (11), novel drug discovery methods (6), treatment augmentation strategies (12), and ADR prophylaxis approaches (2).

2

TB TREATMENT SUPPORT (24 INNOVATIONS)



Included adherence monitoring tools (10), nutrition support solutions (3), counselling innovations, AI-based respiratory sound analysers for follow-up, and post-TB care interventions.

Majority of the innovations (45) in the Treat category were Posters and they highlighted drug development research, treatment support interventions, and adherence solutions. Seven innovations covering areas of treatment monitoring systems and digital support platforms were exhibited; while another seven innovations covering physical devices for pill monitoring, treatment adherence, and integrated therapeutic support were showcased as demonstrations.



PREVENT



INTRODUCTION



The Prevent pillar featured 39 innovations targeting TB prevention, infection control, and proactive screening.

KEY THEMES INCLUDED:

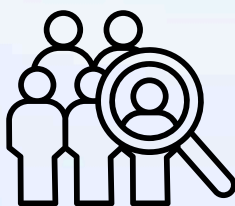
1

TB INFECTION PREVENTION & CONTROL (15 INNOVATIONS)



Included hospital infection control solutions (5), filtration and disinfection technologies (3), personal infection control tools, prevention of reactivation interventions, and bovine vaccination approaches.

Certain screening tools also contributed to prevention by enabling early detection and isolation.



In this category six innovations were presented as Posters and included protocols, strategies and evaluated methods of TB prevention. The prevent arena also showcased seven demonstrations of physical products such as filtration devices, robots and infection control kits, and two innovations were presented as simple exhibits



BUILD

INTRODUCTION



The Build pillar included 72 innovations focused on strengthening health systems, capacity building, community engagement, and multisectoral accountability.

KEY THEMES INCLUDED:

1

TRAINING AND CAPACITY BUILDING (12 INNOVATIONS)

AI-based training tools, virtual training systems, clinical decision support platforms, and integrated training management models.

2

INFORMATION SURVEILLANCE & PROGRAMME MANAGEMENT (23 INNOVATIONS)

Featured digital benefit payment systems, automated analytics platforms, digital repositories, vulnerability mapping tools, and programme feedback mechanisms.

3

MULTISECTORAL ACCOUNTABILITY (10 INNOVATIONS)

Innovations promoting workplace interventions, corporate sector engagement, quality control, and multisectoral collaboration models.

4

COMMUNITY ENGAGEMENT (10 INNOVATIONS)

Focused on awareness generation and participatory mobilisation strategies.

5

SUPPLY CHAIN & LOGISTICS (17 INNOVATIONS)

Included drone-based logistics solutions to enhance the efficiency of sample transportation in hard-to-reach areas. Additionally, innovations on blood sample collection, biological sample processing, sample transportation systems, and transport mediums were showcased to strengthen specimen management and supply chain systems supporting diagnostic and treatment programmes.

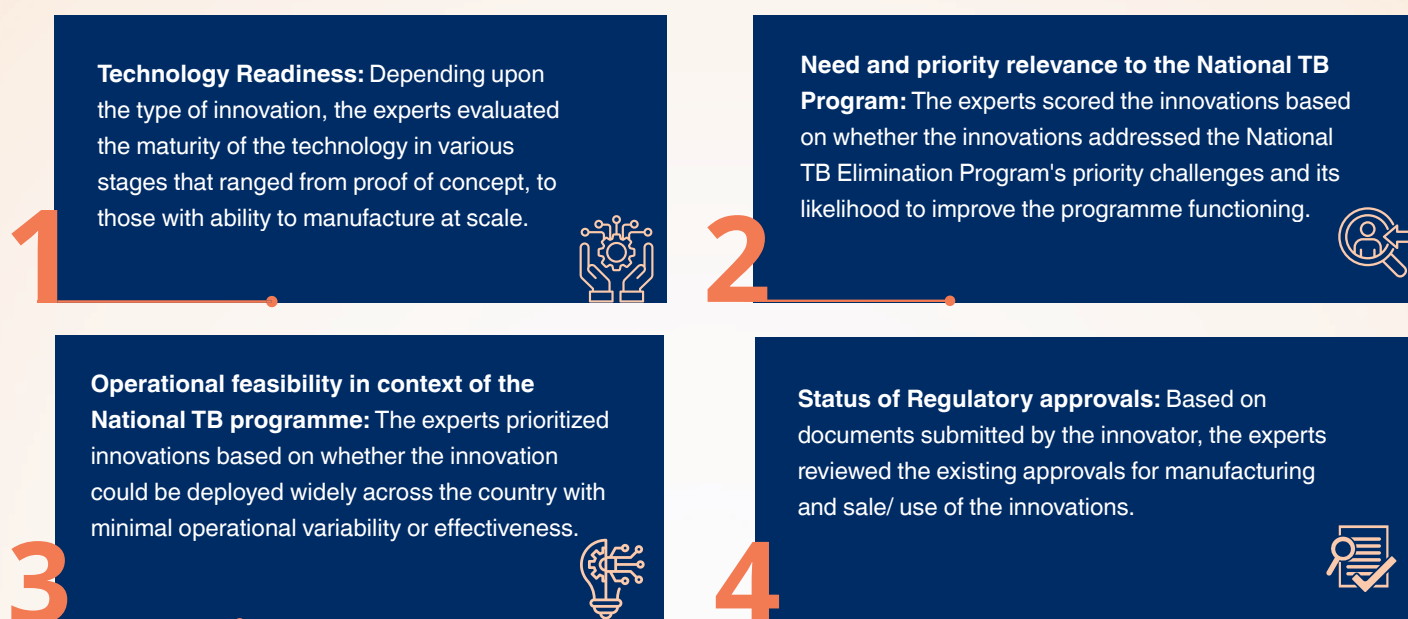


Some of the innovations that covered training approaches, digital health systems, and community and multisectoral engagement models were exhibited in thirty two posters. Twenty six innovations that covered new digital health tools, integrated systems, programme monitoring and capacity building platforms and tools were showcased as simple exhibits. This category included novel sample collection transportation systems, supply chain and logistics including drones and were exhibited as Demonstrations.

Screening and Evaluation of The Innovations

A multidisciplinary group of subject and domain expertise reviewed all innovations under the various categories to recommend further actions from ICMR and the NTEP. The purpose of the screen submitted applications for inclusion in the Exhibition. After inclusion in the exhibition, the committee would also evaluate them, prioritize promising innovations and categorize them based on the type of support to be provided to the innovator. Promising early-stage innovations could be linked with suitable incubator institutions which would support them to develop the innovation, those that have already evolved into a defined product could be linked for pilot testing and required evidence generation processes, those that were mature could be linked with suitable industry partners, and finally those seeking funding could be linked with suitable funding opportunities from various sources.

The experts evaluated the innovations in relation to the following four aspects: 



The evaluation was conducted in four steps 

- 1 Screening and inclusion:** Based on the call for applications for inclusion of the innovation in the summit, the experts evaluated all submissions for inclusion in the exhibition. The experts screened all the submissions and included only actual innovations that fit within the general theme of addressing TB Elimination related challenges.
- 2 In-person examination:** At the exhibition, each of the experts visited the booths set up by the innovator and examined each innovation. This gave an opportunity for the experts to better understand the innovation and its technical intricacies better.
- 3 Short-listing for interviews:** In this stage, the experts convened virtually and compared their notes from their meeting with the innovator. The experts were asked to prioritize and filter in innovations that were promising and could be supported further in their path to maturity.
- 4 Final interview and recommendation:** The short-listed innovations were called for a round of virtual interviews. During the interviews the experts asked specific questions to the innovators to further clarify aspects that were not already provided in the documentation. Based on the interviews, the panel made the final recommendations.



Summary of Final Recommendations

DETECT

In the detect category, 10 products were already approved for use by ICMR and were available in the market to be used by the National TB programme; 15 innovations were already in the ICMR evaluation process and were recommended to be fast tracked; 33 innovations were in various stages of development and were linked to appropriate institutions and technology incubators for further support. Thirteen of the remaining innovations were services or process-related innovations that may be disseminated, and the remaining ones were judged to be of low priority and were excluded.



TREAT

In the Treat category, a total of 10 of 60 innovations were shortlisted. These were all in the development stage and require further proof of concepts or required additional evidence before it could be considered for use. Three of them were related to innovative Drug formulation or Drug delivery platforms; one was related to drug discovery processes, four were tools for measuring or supporting Treatment adherence, one was a tool that predicted the probability of unfavourable outcomes, and one was a tool for assessing TB mortality.



PREVENT

In the Prevent category, a total of 5 of 15 innovations were shortlisted for further support. All of them required further evidence generation around efficacy, including preventive diagnostics and infection prevention strategies.



BUILD

In the build category, a total of 16 of 72 innovations were shortlisted under the Build category. These innovations focus on strengthening the health system and included a variety of innovations from process improvements, services, information products and tools. The 16 shortlisted innovations demonstrated the utility and required support for integration at scale within the TB programme. These innovations required further discussion with NTEP to identify potential use cases with the evidence needed to support their integration within the program



MARKETPLACE



A marketplace facilitates organizations/ companies featuring mature innovations to pitch their products to diverse stakeholders including government representatives, procurement agencies, donors, and implementation partners. There were four dedicated sessions at the marketplace where multiple similar innovations, which were organized under one theme were presented.

The innovators made their pitch through a 5 minute orally delivered pitch, and may have included slide presentations, demonstrations of their products, while the audience could ask questions to the innovators.



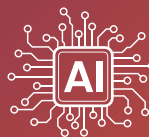
INNOVATIONS SHOWCASED INCLUDED:



Ultraportable
handheld X-ray
devices (5)



Rapid molecular
diagnostic tests
(7)



AI-CAD systems
(3)



Targeted NGS
solutions (4)



PRESENTERS AT THE MARKETPLACE



PRESENTATIONS AT THE MARKETPLACE

Title Innovation	Organization
Handheld X-rays	
Mine 2 Ultraportable Handheld X-ray	Lab India
ProDigi Health Platform for TB screening with PRORAD ATLAS ULTRAPORTABLE Digital X-Ray system	ProDigi
Ultraportable lightweight hand-held xray machine - designed and engineered indigenously	Starnuke
Innovative Solutions for Tuberculosis Detection: Introducing the Ultra-Portable Handheld X-Ray Machine	Edusoft
My Beam Handheld Portable X-ray	Mylab Discovery Solutions
X-RAY AI CAD	
Role of Artificial intelligence using XRAY-CAD Software in detection and differentiation of TB using a phased approach	ICMR
AI Based Last Mile screening	Corporeal Health Solutions Private Limited
Intensified Tuberculosis Surveillance through qXR	Qure
Genki- An End to End Chest X-Ray AI Solution for Public Health Screening	Deeptek
DeepCXR: An Artificial Intelligence based Screening Tool using Chest X-ray images	Institute for Plasma Research
NGS	
SPIT SEQ: Culture-free whole genome sequencing based test for TB patients	MedGenome Labs Ltd
Omega TB	HaystackAnalytics Pvt. Ltd.
tNGS for TB	Genes2Me Pvt. Ltd.
Meril tNGS TB Track Next Generation Surveillance for MDR and XDR TB	Meril
Deeplex Myc TB next generation sequencing diagnostic for rapid, comprehensive culture-free detection of TB drug resistance	GenoScreen

PRESENTERS AT THE MARKETPLACE



PRESENTATIONS AT THE MARKETPLACE

Title Innovation	Organization
Handheld X-rays	
Commercialization and deployment of GeneNAT 300 real-time PCR analyzer for detection of MTB and MDR-TB, under NTEP.	Genetix Biotech Asia Ltd.
mfloDx Technology	EMPE DIAGNOSTICS PRIVATE LIMITED
A rapid and low-cost CRISPR-Cas based tuberculosis detection system	ICMR-RMRCNE
On-field accurate screening of tuberculosis using D-NOME's Pocket PCR based on patented isothermal nucleic acid amplification	D-NOME PVT LTD
Molecular Platforms for RTPCR and POCT based MTB detection & DST in clinical Samples for rapid detection & extensive screening	Huwel Lifesciences Pvt Ltd
Real Time RT-LAMP Analyzer	SmartQR Technologies Pvt Ltd
TB-NTM Real-Time PCR Kit on POCT: Rapid 120-Minute Sample-to-Result Detection of Tuberculosis and Nontuberculous Mycobacteria	Genes2Me Pvt. Ltd.
MTB DETECTION IVD KIT	AGAPPE DIAGNOSTICS
Rapid Real-Time Isothermal NAT for Detection of mTBC and TB Drug Resistance in under 20 minutes	Eradicus
TBFYND: Accelerating the End of TB with a Rapid, Reliable Early Screening Kit	Acrannolife Genomics Private Limited
TB RNA PCR kit for detection of Active TB	Dia Sure Immunodiagnostic LLP



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2.2

CATALOGUE OF INNOVATIONS



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DETECT



**Early and Complete diagnosis of all
people with TB**



01. DIAGNOSIS OF TB AND DR-TB



Innovation ID:160

Title of Innovation: Commercialization of a low-cost miniaturisation version of MODS for direct sensitivity of Mycobacterium tuberculosis

Organization: ICMR-NIRT

Description: The proposed proof of concept is modification of the conventional Microscopically Observed Direct Sensitivity MODS assay which is a non commercial kit as designated by WHO, as the conventional method cannot be made available in a commercial ready to use kit, all the reagents and the highly nutritious media had to be prepared inhouse. The assay is the only direct susceptibility method available for detecting and performing DST directly from clinical specimen for M. tuberculosis. The current method involves the lyophilisation of the reagents in a 96 well plate and miniaturisation of the conventional MODS assay thus converting it into a ready to use kit.

Contact Person: AZGER DUSTHACKEER V. N.

Stall ID: 02-049-7-P

Category of Innovation: Microscopy Improvements>>02. Diagnosis of TB and DR-TB



Innovation ID:116

Title of Innovation: D-NOME's Pocket PCR based on patented isothermal nucleic acid amplification

Organization: D-NOME PVT LTD

Description: "In LMICs, centralized lab based testing for TB has struggled due to factors like infrastructure limitations, skilled labor shortages, and high capital costs for equipment such as RTPCR and thermocyclers. To address this, organizations like WHO and FIND advocate for decentralized, accurate, and effective testing solutions, as rapid antigen tests lack sensitivity and are unsuitable for early TB detection.

DNOME is revolutionizing TB diagnostics using our handheld, portable isothermal PCR device or Pocket PCR for accurate and rapid screening. This device operates on our proprietary synthetic biology based molecular platform, which functions at low temperatures and delivers accuracy comparable to gold standard qPCR RTPCRs.

DNOME's Isothermal PCR technology provides a streamlined, scalable sample to answer TB screening solution. By eliminating complex optics and electronics, our device ensures ease of use and robustness, making it ideal for deployment in resource limited settings. This technology is based on our patented room temperature isothermal PCR technology based on set of 5 proprietary engineered enzymes and buffer components. This platform technology has been tested widely across various adjacent applications and over 200 clinical samples and cross compared to gold standards with over 95 percent accuracy sensitivity and specificity. For TB extensive internal validations have been performed on approximately 50 to 60 clinical samples as well as synthetic samples.

Contact Person: Dr Divya Sriram

Stall ID: 02-060-1-S

Category of Innovation: New Rapid Mol Test>>02. Diagnosis of TB and DR-TB



Innovation ID:104

Title of Innovation: A rapid and low-cost CRISPR-Cas based tuberculosis detection system

Organization: ICMR-RMRCNE

Description: "The core of this technology is its combination of:

RapidBact - A rapid DNA extraction kit (Patent filing in process):

The RapidBact method enables a quick and efficient extraction of DNA from biological samples, significantly reducing the time required for sample processing. This is particularly crucial for areas with limited access to laboratory infrastructure, where time-saving is essential for improving diagnostic throughput.

Glow-TBPCR - A PCR-CRISPR based detection kit TB (Indian Patent Application No. 202411043686):

The Glow-TBPCR assay leverages the highly specific CRISPR-Cas system, known for its precision in recognizing and cleaving specific DNA sequences. Combined with PCR amplification, this detection method provides remarkable sensitivity, enabling the identification of DNA even in low concentrations. The assay can detect as low as 0.012 copies of DNA and specificity comparable to commercially available and widely used Truenat and GeneXpert technologies.

RapidGlow - A fluorescence detection-cum-incubation device (Indian Patent Application No. 202411016083):

The RapidGlow device serves as both a detection platform and incubation chamber. It facilitates real-time fluorescence detection to monitor the reaction as it progresses.

Cost-Effectiveness

One of the standout features of this system is its affordability. The test kit costs approximately INR 150 per test, making it an extremely cost-effective solution compared to other commercially available molecular diagnostic systems. The device is priced at around INR 10,000, which is significantly lower than many existing diagnostic instruments on the market, making it accessible to resource-constrained regions.

Contact Person: Dr. Atique Ahmed

Stall ID: 02-059-1-S

Category of Innovation: New Rapid Mol Test>>02. Diagnosis of TB and DR-TB



Innovation ID:98

Title of Innovation: Trueamp Platform for MDR-TB Detection

Organization: Molbio Diagnostics Limited

Description: Trueamp is a next-generation multiplex real-time PCR platform designed to make molecular diagnostics more accessible, bridging the gap between traditional laboratory-based testing and decentralized diagnostics. It allows for the simultaneous detection of multiple targets in a single test, making it ideal for drug-resistant tuberculosis (DR-TB) detection and other infectious disease panels.

Key Features:

- **Multiplexing Capability:** Can detect up to 16 targets per run, making it perfect for comprehensive drug resistance profiling.
- **Portable and Compact:** Suitable for mid-tier and peripheral labs, offering high-throughput testing without requiring centralized infrastructure.
- **Automated Interpretation:** Results are pre-analyzed and displayed in an easy-to-understand format, eliminating the need for expert molecular biologists.
- **Compatibility with Trueprep AUTO v2:** Uses a cartridge-based sample extraction system for standardized, contamination-free sample preparation.
- **Uninterrupted Power Functionality:** Can complete tests even during power outages, making it ideal for resource-limited settings.
- **Application in MDR-TB Testing:** Trueamp MDR-TB Plus can detect MTB or NTM differentiation and key drug resistance markers, including Rifampicin (RIF), Isoniazid (INH), and Fluoroquinolone (FQ) resistance. It offers several advantages over existing methods:
 - Faster than culture-based drug susceptibility testing (DST), which takes weeks.
 - More cost-effective than cartridge-based PCR systems.
 - Simpler than line probe assays while maintaining high accuracy.

Contact Person: Cindrella Das

Stall ID: 02-058-1-S

Category of Innovation: New Rapid Mol Test>>02. Diagnosis of TB and DR-TB



Innovation ID:91

Organization: International Centre for Genetic Engineering and Biotechnology (ICGEB)

Title of Innovation: POC for diagnosis of pulmonary tuberculosis, and latent TB infection using quantitative signatures of circulating sncRNAs

Description: Circulating small non-coding RNAs (sncRNAs) including microRNAs are being considered as promising biomarkers for many human diseases since they meet several of the criteria for being a preferable biomarker including high specificity, easy accessibility, and sensitivity. MTB infection of human macrophages has been shown to induce specific miRNA (Micro ribonucleic acids) response. miRNAs are stable, small RNAs of 18-25 nucleotides that orchestrate immune response by inhibiting mRNA translation leading to mRNA target degradation and decreased protein expression in humans. A number of studies show that miRNAs play important roles in host-pathogen interactions. Circulating miRNAs are promising molecular markers for diverse pathological conditions and may aid in diagnosis, prognosis and monitoring treatment response. Differential miRNAs patterns may be responsible for immune response that leads to clearance or persistence of MTB in host.

Our group has identified the sncRNA-based biomarkers for diagnosis (TB and LTBI) as well as to predict treatment progression, and we have shown to have the potential to be developed as the diagnostic platform. We are validating the quantitative signatures of circulating ncRNAs to diagnose Active TB (discriminate between diseased vs healthy) and TB infection [discriminate between TB infected without disease (TBI) vs uninfected individuals in diverse geographical regions, which will confirm its potential for TB diagnosis. We will utilize the data for the development of a Point of care device. Designing and fabrication of microfluidic chips will be carried out in collaboration with a suitable industrial partner, i.e., a company that has prior expertise and knowledge in developing such a microfluidic-based diagnosis platform. The microfluidic platform developed above will be evaluated with samples at the different field sites in India. The device will be validated as per ICMR standards.

Contact Person: Dr Asif Mohammed

Stall ID: 02-057-1-P

Category of Innovation: New Rapid Mol Test>>02. Diagnosis of TB and DR-TB



Innovation ID:68

Title of Innovation: Papyrus MutaCheck Pro: 'One Test. Multiple Pathogens. Deeper AMR Insights'

Organization: Papyrus Diagnostics Private Limited

Description: Papyrus TB MutaCheck Pro is a next-generation molecular diagnostic platform designed to accelerate TB detection, expand AMR profiling, and enhance healthcare efficiency. With multi-pathogen capabilities, it leverages existing TB diagnostic infrastructure to maximize impact while reducing costs. MutaCheck Pro extends AMR profiling to fluoroquinolones and second-line TB drugs, providing deeper insights for precision treatment. The test is automated, simple to use, and deployable at decentralized levels, ensuring broader access to critical diagnostics.

With a 2.5 hour turnaround time, MutaCheck Pro significantly reduces diagnostic delays, enabling faster treatment initiation and improved patient outcomes. Its design allows for seamless integration into national TB programs, supporting evidence-based decision-making and strengthening AMR surveillance efforts.

Currently in the assay validation phase, Papyrus TB MutaCheck Pro has completed preliminary clinical trials at NIRT Chennai with successful results, demonstrating its effectiveness in real-world settings.

Contact Person: Venkata Subramanian Ramesan

Stall ID: 02-056-1-S

Category of Innovation: New Rapid Mol Test>>02. Diagnosis of TB and DR-TB



Innovation ID:34

Title of Innovation: TB NTM MPCR-ULFA Multiplex PCR and Universal Lateral Flow Assay Kit

Organization: AB DIAGNOPATH MFG PVT LTD

Description: TB NTM MPCR-ULFA Kit is an in vitro diagnostic kit designed for the simultaneous detection of Mycobacterium tuberculosis TB and non-tuberculous mycobacteria NTM in sputum specimens through MPCR-ULFA Multiplex PCR and Universal Lateral Flow Assay.

Features and Advantages:

- Target gene: IS6110 and mtp40 for TB, and rpoB for NTM
- High sensitivity and specificity
- All kinds of PCR thermocyclers are usable for the assay
- User-friendly and convenient method
- Prevention of PCR carry-over contamination with the use of UDG
- ULFA results in 10 minutes

Contact Person: AJAY ANAND

Stall ID: 02-055-1-S

Category of Innovation: New Rapid Mol Test>>02. Diagnosis of TB and DR-TB



Innovation ID:28

Title of Innovation: Out of the lab Molecular based MTB screening platform

Organization: InnoDx Solutions Pvt Ltd

Description: To develop a rapid point of care diagnostic assay for the detection of all drug sensitive and resistant Mycobacterium tuberculosis MTB infected cases

Objectives

- To develop and standardize DNA extraction free methods for the detection of Mycobacterium tuberculosis in different samples Sputum and respiratory samples
- To develop battery operated instrument for the detection of different fluorescence probes
- To evaluate and compare the efficiency of probe based LAMP/PCR methods with the existing colorimetric based method for the detection of MTB
- To determine the limit of detection and limit of quantification of our assay to detect both drug sensitive and drug resistance cases
- The newly developed assay could be utilized in the screening and detection of drug resistant TB cases in the field outreach of diagnostic labs Since we have ISO 13485 and CDSCO audited manufacturing facility so these kits can be easily manufactured in our country with minimal cost and readily available in the country when needed Present study will help the physicians to start drug treatment immediately after the detection"

Contact Person: Jimmy Bhambra

Stall ID: 02-054-1-S

Category of Innovation: New Rapid Mol Test>>02. Diagnosis of TB and DR-TB



Innovation ID:16

Title of Innovation: CRISPR for diagnosis of MDR TB

Organization: Individual

Description: Detection of multidrug resistant tuberculosis (MDR TB) with the help of clustered regularly interspaced short palindromic repeats (CRISPR) Cas system. Delayed detection of Multi-drug resistant tuberculosis (MDR-TB) results in improper treatment, extensive drug resistance and continued transmission of resistant TB.

When sample containing resistant gene (nucleic acid sequence) hybridize with guiding RNA (gRNA) it forms activated Cas gRNA complex which has affinity towards fluorescent or chromophore report molecule leads to detection of the resistant gene. Resistant genes: katG S315T, katG S315T1, katG R463L, inhA C15T and rpoB S450L, rpoB codon 526, embB (G406A), embB (M306I), embB (M306V). Cas enzyme: Preferred Cas 14 (Cas 12, Cas 14, dCas, Cas9, Cas 13a, csm 6).

Contact Person: Madhavi Ashok Jejurkar

Stall ID: 02-053-1-P

Category of Innovation: New Rapid Mol Test>>02. Diagnosis of TB and DR-TB



Innovation ID:15

Title of Innovation: mfloDx Technology

Organization: EMPE DIAGNOSTICS PRIVATE LIMITED

Description: The mfloDx is a diagnostic platform which is based on two well-established technologies: padlock probe-dependent rolling circle amplification (RCA, an isothermal nucleic acid amplification method) and sensitive lateral flow nucleic acid biosensor chemistry (signal development readout). The mfloDx MDR-TB, can be used on patients sputum sample directly (without preceding culturing). The technique is easy to perform and has a turnaround time of 3 hours. The mfloDx MDR-TB AMP Kit consists of primers and padlock probes used to amplify DNA segments (sequences) by a technology called, rolling circular amplification (RCA). These padlock probes are specifically designed to identify the presence of MTC and its antibiotic resistance to rifampicin and isoniazid in fast and accurate manner. Padlock probes are highly selective DNA probes that forms circles upon hybridizing to their complementary region of DNA enabling specific and multiplex detection of single nucleotide variations. The digested amplified products are applied on the lateral flow cassette to see the visual results.

Contact Person: Dr. Gayathri Ramasubban

Stall ID: 02-052-1-P

Category of Innovation: New Rapid Mol Test>>02. Diagnosis of TB and DR-TB



Innovation ID:86

Title of Innovation: Remodification of Dental CBCT to lung CBCT for TB diagnosis

Organization: ICMR- NIRT

Description: "CBCT is a medical imaging technique consisting of xray computed tomography where the xrays are divergent, forming a cone beam around the patients chest either in standing or semirecumbent position obtaining upto nearly several distinct images. the collected data sets are reconstructed and producing images composed of three dimensional voxels of anatomical data that can be manipulated and visualized with specialized software. but CBCT is limited only to dental imaging purpose and not used in other imaging body parts.

By making certain modifications such as tube exposure parameters, detector setup and specific reconstruction algorithm for lungs in that machine, it plays a vital role in TB and lung pathologies for early diagnosis for distant rural peoples having low medical imaging facilities in India.

Contact Person: Dilip kumar M

Stall ID: 02-039-3-P

Category of Innovation: 3D chest Xray>>02. Diagnosis of TB and DR-TB



Innovation ID:168

Title of Innovation: TB TRUTH

Organization: Lords Mark Industries Limited

Description: Rapid detection of tuberculosis (TB) through point-of-care fluorescence microscopy of sputum smears of patients suspected of having infection by *Micobactrium tuberculi* bacteria responsible for TB. It is a pointof-care sputum microscopy for detection of *Mycobacterium tuberculi* (Mtb) bacteria. A Graphic User Interface (GUI) was developed for hardware control of the device, image processing and automated counting of the Mtb bacteria in the field of view of the microscope objective.

Contact Person: Mr.Sachidanand Upadhyay

Stall ID: 02-050-7-S

Category of Innovation: Microscopy Improvements>>02. Diagnosis of TB and DR-TB



Innovation ID:144

Title of Innovation: TB-NTM Real-Time PCR Kit on POCT: Rapid 120-Minute Sample-to-Result Detection of Tuberculosis and Nontuberculous Mycobacteria

Organization: Genes2Me Pvt. Ltd.

Description: Rapid and accurate nucleic acid amplification tests are essential for early detection and differentiation of Mycobacterium tuberculosis and non-tuberculosis mycobacteria. The MTB-NTM Multiplex kit utilizes real-time PCR to accurately diagnose MTBC and NTM in human clinical specimens. When combined with the Genes2me OnePCR Point-of-Care Instrument, this solution provides rapid, integrated detection and differentiation of TB and NTM from sputum, culture, or other pulmonary samples. Our comprehensive solution achieved:

- 95-96 percent clinical sensitivity across TB and NTM targets
- Effective differentiation between MTB and NTM
- Limit of Detection: 150 copies per mL for wild-type MTB and NTM strains
- No cross-reactivity with common pathogens or interference from substances like human genomic DNA, tobacco, or tuberculosis drugs

Contact Person: Namrata Erande

Stall ID: 02-063-1-S

Category of Innovation: New Rapid Mol Test>>02. Diagnosis of TB and DR-TB



Innovation ID:118

Title of Innovation: MagnaSlide

Organization: Drizzle Health

Description: MagnaSlide is a polymer-based sample preparation device (Sensitivity greater than 87.5 percent, Specificity greater than 98.7 percent, LoD lower than 500 CFU per milliliter) that selectively binds to bacteria of interest, such as TB-causing mycobacteria. MagnaSlide, developed through extensive research at Johns Hopkins and hundreds of stakeholder interviews, streamlines sample processing like a kitchen blender - all reagents are loaded into a single vial, producing a prepared slide with a single focal point for bacterial detection. This automates critical manual skills, such as selecting bacteria-rich areas and properly scanning the slide. Additionally, MagnaSlide enhances AI-based slide readers, which currently struggle with inconsistent sample quality.

The device has generated strong interest from leading private diagnostic labs in India, where nearly half of TB patients first seek care, and pilot programs are underway. MagnaSlide is also being tested for other sample types, including urine.

Contact Person: Akash Gupta

Stall ID: 02-048-7-S

Category of Innovation: Microscopy Improvements>>02. Diagnosis of TB and DR-TB



Innovation ID:105

Title of Innovation: Digital Sputum Analysis Platform (D-SAP): AI-Powered Early TB Detection and Drug Resistance Monitoring System

Organization: P. D. U. GOVT. MEDICAL COLLEGE-RAJKOT (GUJARAT)

Description: The Digital Sputum Analysis Platform (D-SAP) is an innovative solution designed to improve tuberculosis (TB) diagnosis and monitoring by combining advanced microscopy, artificial intelligence (AI), and cloud computing. The platform aims to tackle key challenges in TB management, including delayed diagnoses, missed cases, and the late detection of drug resistance. By transforming traditional microscopy into a digital tool, D-SAP enhances the accuracy and efficiency of TB diagnosis, even in resource-limited settings, while delivering real-time results. This technology offers a significant advancement in the speed and reliability of TB detection, contributing to more timely and effective treatment.

Contact Person: DR. BHAVESH KANABAR

Stall ID: 02-047-7-P

Category of Innovation: Microscopy Improvements>>02. Diagnosis of TB and DR-TB



Innovation ID:42

Title of Innovation: Autoscope-FDA TB: Automated AI assisted microscopy for live TB bacilli detection in sputum

Organization: Ayukriyam Innovations Pvt Ltd

Description: Autostain and Autoscope systems have been developed to enhance TB treatment monitoring in resource-limited settings.

The Autostain system is an automated device for smear preparation and slide staining, using fluorescein diacetate (FDA) staining to detect viable Mycobacterium tuberculosis based on intracellular enzyme activity. By automating the staining process, Autostain improves reproducibility, reduces manual errors, and accelerates TB detection in microscopy-based workflows. It features automated reagent handling, minimized contamination risks, and a portable design, making it highly suitable for field applications. Moreover, its seamless integration with the Autoscope and AI-based TB detection systems further enhances diagnostic accuracy and efficiency.

The Autoscope is an AI-powered automated microscopy system designed to detect fluorescently labeled bacilli in clinical samples, such as sputum. It employs automated scanning and AI-assisted cell detection, significantly improving TB detection sensitivity and specificity. By integrating automated microscopy with AI-powered image analysis, the Autoscope delivers rapid, reliable TB diagnosis, reducing reliance on expert interpretation. Additionally, its integration with digital health systems enables real-time data reporting, patient tracking, and treatment monitoring, ensuring early intervention and better disease management.

Together, Autostain and Autoscope revolutionize TB diagnostics, especially in rural and resource-constrained settings. By leveraging automation, AI, and microscopy, these technologies enhance accessibility, efficiency, and accuracy, ultimately contributing to improved TB control and patient outcomes.

Contact Person: Ravikrishnan Elangovan

Stall ID: 02-046-7-S

Category of Innovation: Microscopy Improvements>>02. Diagnosis of TB and DR-TB



Innovation ID:171

Title of Innovation: A composition of a growth supplement for culturing M. tuberculosis in liquid culture medium

Organization: Parul University

Description: The present invention relates to a composition of a growth supplement for culturing M. tuberculosis in liquid culture medium with supplementation of pyruvate along with addition of certain amino acids to enhance and improve the growth of M. tuberculosis thus, shortening the turn-around time for the early detection which pushes the treatment regimen at faster rate. The growth factors that are used are:- pyruvate supplement, and β -alanine & L-valine amino acids.

Contact Person: Dr. Vijay Jagdish Upadhye

Stall ID: 02-045-6-P

Category of Innovation: Culture improvement>>02. Diagnosis of TB and DR-TB



Innovation ID:170

Title of Innovation: A Enriched Solid Culture Medium for in Vitro Mycobacterial Growth and Its Process of Preparation

Organization: Parul University

Description: The present invention relates to an enriched solid culture medium for in vitro mycobacterial growth and its process of preparation. This provides M. tuberculosis enriched solid culture medium and its method of development with supplementation of some amino acid and metabolites to enhance and improve the growth of M. tuberculosis. This invention is useful in the clinical set up as in low 10 and poor resource setting

Contact Person: Dr. Vijay Jagdish Upadhye

Stall ID: 02-044-6-P

Category of Innovation: Culture improvement>>02. Diagnosis of TB and DR-TB



Innovation ID:235

Title of Innovation: Artificial Intelligence and Deep Machine Learning in Differentiating Mediastinal Lymph Node Tuberculosis from others

Organization: All India Institute of Medical Sciences, Mangalagiri

Description: We are developing a AI or Deep machine learning tool for the diagnosis of extra-pulmonary tuberculosis mainly the mediastinal lymph node TB, to differentiate it from other causes like Sarcoidosis, malignancy etc. The AI tool tool would be developed by integrating the radiological and histopathological data of microbiologically positive mediastinal lymph node tuberculosis.

The AI tool then should be able to pick up the cases of suspected mediastinal lymph nodes based on the radiological and histopathology data without the need to be microbiologically positive.

Contact Person: Mahesh V

Stall ID: 02-043-5-P

Category of Innovation: Ai Result Reader>>02. Diagnosis of TB and DR-TB



Innovation ID:233

Title of Innovation: LPA Ai Reader

Organization: Wadhwani Institute for Artificial Intelligence

Description: AI-powered solution that employs computer vision to automate the reading, interpretation and transmission of Line Probe Assay test results used to diagnose DR-TB cases. It aids the reading of LPA assay strip, reads the mutations, provides decision support on the result and digitises them into Ni-shay.

Contact Person: Aparna Chaudhary

Stall ID: 02-042-5-D

Category of Innovation: Ai Result Reader>>02. Diagnosis of TB and DR-TB



Innovation ID:33

Title of Innovation: AAIcare - Genomics based method to determine TB Drug Resistance for all 19 Drugs

Organization: AarogyaAI Innovations

Description: "AAIcare-TB is a product that can rapidly, precisely and comprehensively identify TB-drug resistance in a patient sample using Targeted Next-Generation Sequencing (tNGS) and Whole Genome Sequencing (WGS). Our AI-powered genomics analysis SaaS tool enables clinicians to make more data-driven treatment decisions for better outcomes. The flagship product for precision diagnosis of drug resistant tuberculosis is a make in India product that is built by experienced researchers. The patent protected technology has been validated in over 500 clinical samples For all 19 drugs. With one peer reviewed study published and another in review. This unique technology is powered by AI to extract information thus far not known in literature to strengthen our drug regimens and NTEP.

Key features:

1. Ease of use: simple drag and drop interface
2. One Click report generation : for identification, treatment & surveillance
3. Coverage holistic: drug susceptibility report for all 19 drugs
4. Batch processing : over 100 NGS samples can be analysed at once
5. Scaling: cloud deployment on AWS for reach
6. Speed: reports generated in 40 mins post sequencing
7. Culture-free approach ‘ sample agnostic
8. Hardware agnostic
9. Surveillance: the evolutionary drift and mutational rates can be monitored through whole-genome sequencing and AI.

Contact Person: Praapti Jayaswal

Stall ID: 02-041-5-D

Category of Innovation: Ai Result Reader>>02. Diagnosis of TB and DR-TB



Innovation ID:280

Title of Innovation: Telepathology Added Health Information System (THIS) for Early Diagnosis of EP-TB

Organization: All India Institute of Medical Sciences Deoghar

Description: Delayed or missed diagnosis of EPTB leads to increased morbidity, complications, and continued transmission. To address these diagnostic challenges, we propose the Telepathology Added Health Information System THIS, a digital telepathology platform integrated with electronic health records EHRs. THIS will enable remote diagnosis of EPTB by linking primary healthcare centers PHCs, district hospitals, and specialized TB laboratories, ensuring faster diagnostic access and expert consultations for rural populations.

Methodology:

The development of THIS will involve the following key components:

- **Digital Microscopy and Telepathology.** In phase one, tissue samples from suspected EPTB patients will be digitized using automated digital slide scanners and shared with expert pathologists via a secure telepathology network, preferably through a smartphone or web-based structure.
- **Electronic Health Records EHRs.** A cloud-based digital repository will store patient history, clinical images, and diagnostic results, facilitating expert consultation, continuity of care, and longitudinal monitoring.
- **AI-Powered Image Analysis.** In an advanced stage phase two, deep learning algorithms will be employed to assist in pattern recognition, lesion detection, and classification of TB-related histopathological changes, improving early detection accuracy.

The implementation of THIS has the potential to transform the diagnosis of extrapulmonary TB by reducing diagnostic delays, increasing diagnostic accuracy, and improving accessibility in underserved regions.

Contact Person: Sunil Panigrahi

Stall ID: 02-040-4-D

Category of Innovation: Ai Based Telepathology>>02. Diagnosis of TB and DR-TB



Innovation ID:11

Title of Innovation: Commercialization and deployment of GeneNAT 300 real-time PCR analyzer for detection of MTB and MDR-TB, under NTEP

Organization: Genetix Biotech Asia Ltd.

Description: The GeneNAT Real-Time PCR system uses patented chip-based technology to detect MTB and MDR-TB, including Rifampicin and Isoniazid resistance, on a single chip. It provides rapid outcomes (40 cycles in 40 minutes) along with a limit of detection as low as 2 copies per microliter of samples. The system uses preloaded reagents and requires only DNA sample addition. GeneNAT MDR-TB detection detects MPB64 and IS6110 for MTB detection, rpoB, katG, and inhA genes to detect Rifampicin and Isoniazid resistance phenotype. The system is based on the TaqMan probe assay.

Key features include a portable design (3.3 kg), an intuitive user interface, and fast turnaround time (under 2 hours from sample collection). The system is ideal for point-of-care applications, with no cross-reactivity and a shelf life of 18 months. It is USFDA-approved, CE-certified, and designed for ease of use by technicians with basic training.

Contact Person: Saheli Halder

Stall ID: 02-051-1-S

Category of Innovation: New Rapid Mol Test>>02. Diagnosis of TB and DR-TB



Innovation ID:330

Title of Innovation: A Real-time PCR-based Point-of-Care Device for detection of TB and other infectious diseases

Organization: CoSara Diagnostics Pvt. Ltd.

Description: CoSara Diagnostics Pvt. Ltd., a joint venture between Synbiotics Ltd. (a Sarabhai group company) and Co-Diagnostics Inc., specializes in manufacturing high-quality, cost-effective molecular diagnostic products. These include real-time PCR kits and rapid diagnostic tests using their proprietary Co-Primers™ technology. The company's 30,000 sq. ft. GMP-approved facility in Ranoli, Gujarat, supports the "Make in India" initiative by producing in-house oligonucleotides and diagnostic reagents.

The Co-Dx PCR Pro is a real-time PCR-based Point-of-Care platform designed to detect various pathogens, including Mycobacterium tuberculosis (MTB), responsible for tuberculosis. The Co-Dx PCR Pro MTB test cartridge allows qualitative detection of MTB Complex DNA from tongue swab or sputum samples. The system consists of the Co-Dx PCR Pro Device, which operates via a mobile app through Bluetooth, a Sample Lysis Device, sample preparation tubes, and single-use test kits.

The testing process involves:

- A technician or user (under supervision) collecting a sample and introducing it into the Sample Lysis Device.
- The treated sample is then placed in the test cartridge, which is inserted into the device for testing.
- Results are available in about 30 minutes, delivered through the mobile app.
- The Co-Dx PCR Pro uses fluorescent-based RT-PCR and Co-Diagnostics' Co-Primer technology to amplify targeted nucleic acids without conventional nucleic acid extraction. The system targets highly conserved insertion sequence genes of the MTB Complex and includes human DNA control genes as an internal positive control.

Key features of the system include:

Simple operation: Minimal handling required, designed for mobile laboratory use.

Efficient testing: Results in approximately 45 minutes from sample collection to result.

Data processing: Fluorescence data is sent via Bluetooth to the mobile app, processed in the cloud, and the result is provided as "Negative," "Positive," or "Inconclusive."

The Co-Dx PCR Pro system is currently in the pilot-scale validation phase, with analytical studies ongoing after the feasibility studies and prototype development were completed.

Contact Person: Dr. Ashtaad Vesuna

Stall ID: 02-073-1-S

Category of Innovation: New Rapid Mol Test>>02. Diagnosis of TB and DR-TB



Innovation ID:289

Title of Innovation: Point of Care Ultrasound (POCUS) device in screening children with Pulmonary and EP-TB

Organization: PATH

Description: POCUS is a small handheld device which provides high quality image to a compatible smart device. POCUS provides excellent quality image similar to that of the conventional Ultrasound device. POCUS helps in evaluating for pericardial, pleural and ascitic effusion, abdominal lymphadenopathy, micro abscess in liver and spleen and in some malignancies. POCUS has been used for EPTB diagnosis in PLHIV and on presumptive PTB suspects. POCUS technology is USFDA Approved for its use in COVID-19 Screening. Many Indian and foreign agencies have developed AI to screen tuberculosis.

Contact Person: Deepak Balasubramanian

Stall ID: 02-083-8-P

Category of Innovation: Paediatric TB Screening>>02. Diagnosis of TB and DR-TB



Innovation ID:332

Title of Innovation: Targetted Next Generation Sequencing for Drug Resisitant Tuberculosis

Organization: ICMR-National Institute for Research In Tuberculosis

Description: The use of novel in-house primer sets combined with nanopore-based DNA sequencing instruments, such as those from Oxford Nanopore Technologies (ONT), offers a promising solution for low-resource and diverse field settings. These portable, robust, and cost-effective sequencers have the potential to be used in near-patient settings for targeted next-generation sequencing (tNGS), revolutionizing TB drug susceptibility testing (DST) and treatment decision-making.

In contrast to the current WHO-approved methodology, which is limited to fewer anti-tuberculosis drugs, expensive, and requires BSL3 containment, the newly developed approach uses a custom primer set, algorithm, and analysis platform. This method provides a cost-effective solution that covers a broader range of anti-tuberculosis drugs without the need for BSL3 facilities, making it more accessible and efficient for widespread use, especially in resource-limited settings. This innovation could lead to earlier detection of drug resistance and enable strain identification, enhancing treatment strategies and epidemiological investigations.

Contact Person: Siva Kumar S

Stall ID: 02-082-2-P

Category of Innovation: NGS>>02. Diagnosis of TB and DR-TB



Innovation ID:310

Title of Innovation: A Rapid and cost effective tNGS target enrichment workflow using GtnRich for AMR detection in Mycobacterium Tuberculosis

Organization: GENOTYPIC TECHNOLOGY PVT LTD

Description: The increasing burden of tuberculosis (TB), especially multi-drug resistant (MDR) TB, poses a significant public health challenge in India, the country with the highest TB incidence globally. In response to this, we have developed an innovative, cost-effective, and rapid precision medicine solution aimed at accelerating the diagnosis and treatment of drug-resistant TB. Our solution leverages a comprehensive panel of 24 antimicrobial resistance (AMR) genes, aligned with the WHO recommendations, along with 9 additional genes specifically relevant to the National Tuberculosis Elimination Programme (NTEP) in India. By utilizing genetic testing to identify resistance mutations in Mycobacterium tuberculosis, we can guide therapy selection.

Contact Person: SUDHA NARAYANA RAO

Stall ID: 02-081-2-P

Category of Innovation: NGS>>02. Diagnosis of TB and DR-TB



Innovation ID:255

Title of Innovation: Deeplex Myc TB next generation sequencing diagnostic for rapid, comprehensive culture-free detection of TB drug resistance

Organization: GenoScreen

Description: The Deeplex Myc TB test (Genoscreen, France) is a targeted NGS based kit for the simultaneous and prediction of drug resistance of MTBC strains, directly applicable on sputum samples. The assay relies on deep sequencing of a 24 plex amplicon mix, and it targets 18 MTBC gene regions associated with resistance to 15 anti TB drugs. Mycobacterial species identification is performed by targeting the hsp65 gene; the spoligotyping target (CRISPR Direct Repeat locus) and phylogenetic single nucleotide polymorphisms (SNPs) in targets associated with drug resistance are used for MTBC strain genotyping. The assay is performed using the Nextera XT and DNA Flex library preparation kits on the iSeq 100, MiniSeq, MiSeq and NextSeq sequencing platforms (Illumina). The solution includes an automated analysis pipeline of the sequencing data in a secure online application with integrated databases for results interpretation.

Deeplex Myc TB was endorsed and highlighted in 2023 by the WHO as the only tNGS assay meeting the performance criteria for all 10 drugs evaluated, making it the most effective rapid WHO recommended solution for DR TB diagnosis available to date. By adopting Deeplex Myc TB, healthcare providers gain access to the most advanced tNGS based tool, supporting faster and extensive diagnoses in alignment with WHO recommendations. This novel diagnostic is in use in more than 50 countries on the five continents

Contact Person: TaillÃ©

Stall ID: 02-229-2-D

Category of Innovation: NGS>>02. Diagnosis of TB and DR-TB



Innovation ID:226

Title of Innovation: New Targeted Gene Sequencing Panel for Cost-Effective Drug-Resistant TB Screening

Organization: Premas Life Sciences Pvt. Ltd.

Description:

To bridge the gap between affordability and accuracy, Premas Life Sciences is developing an amplicon-based targeted gene sequencing panel for DR-TB screening. This approach offers several key advantages:

1. Rapid and cost-effective detection of known drug resistance mutations.
2. Higher sensitivity and specificity compared to conventional PCR-based assays.
3. Scalability for high-throughput screening, making it suitable for widespread clinical adoption.
4. Direct compatibility with sputum-extracted DNA, eliminating the need for culture-based testing and reducing turnaround time.

By focusing on specific resistance-associated genes, targeted sequencing provides an efficient and affordable alternative while maintaining high accuracy. It enables clinicians to make faster and more informed treatment decisions, improving patient outcomes and supporting TB eradication efforts.

Contact Person: Dr Sanjay Ghawana

Stall ID: 02-080-2-P

Category of Innovation: NGS>>02. Diagnosis of TB and DR-TB



Innovation ID:202

Title of Innovation: Meril tNGS TB Track Next Generation Surveillance for MDR and XDR TB

Organization: Meril Diagnostic Pvt Ltd

Description: Meril tNGS TB-Track is an advanced targeted next-generation sequencing based technology designed for real-time detection, tracking, and surveillance of drug-resistant TB.

Unlike conventional diagnostics, which are slow and limited in detecting drug resistance, Meril tNGS TB-Track offers a comprehensive solution by providing rapid results within 48 to 72 hours compared to weeks required for culture-based methods. It detects resistance to 20 anti-TB drugs, covering both first-line and second-line treatments. With a low limit of detection of 500 copies per milliliter, it enables early identification of TB in low-bacterial-load cases, including paucibacillary and extrapulmonary TB. This technology also supports real-time epidemiological surveillance, aiding in the containment of MDR and XDR TB.

Technology Overview

- Sample Processing is Compatible with sputum, cerebrospinal fluid, pleural fluid, and other clinical samples.
- Target Enrichment and NGS Sequencing: High-depth sequencing of 25 MTB genes associated with drug resistance.
- Bioinformatics Analysis – Automated identification of resistance mutations, cross-referenced with World Health Organization TB mutation databases.
- Comprehensive Reporting; Delivers actionable insights for clinicians to support precise treatment decisions.

Contact Person: Dr Pooja Fulmali

Stall ID: 02-079-2-S

Category of Innovation: NGS>>02. Diagnosis of TB and DR-TB



Innovation ID:155

Title of Innovation: tNGS for TB

Organization: Genes2Me Pvt. Ltd.

Description: "Genes2Me TB NGS panel is designed to map 53 kb region of the M. tuberculosis genome for resistance genes and associated mutation sites, as well as SNP loci. It is a hybridization probed based panel specifically designed for the identification, genotyping, and antibiotic resistance prediction in genes and loci associated with M. tuberculosis complex (MTBC). It includes more than 30 resistance genes and associated mutation sites enables precise subtyping and resistance prediction of M. tuberculosis, while being compatible with both 2nd and 3rd generation sequencing platforms such as Illumina, Thermo Fisher (Ion Torrent), MGI and Elements Biosciences (Aviti).

The G2M TB NGS assay utilizes deep sequencing of 30 key MTBC gene targets linked to resistance against first- and second-line drugs. By analyzing the presence or absence of mutations in these loci and cross-referencing with curated databases, the assay predicts whether the MTBC strain in the sample is susceptible or resistant to each antibiotic. This comprehensive assay predicts resistance to 14 anti tuberculosis drugs or drug classes, including newer compounds like bedaquiline and linezolid, making it one of the most extensive genotypic tool directly applicable to clinical specimens. Beyond predicting antibiotic resistance, G2M TB NGS assay also enables the identification of MTBC strain types within a sample. MTBC strains are spoligo typed and genotyped based on nucleotide identity of the hsp65 gene. This information can be obtained in a pictorial format from the CLiSeq software as indicated in the figure 1. The panel ensures 100 percentage coverage of all genes and good coverage of genes at the recommended depth of 5000X.

The G2M TB NGS assay eliminates the need for mycobacterial cultures and can be applied directly to clinical samples with minimal bacterial loads. The fully automated reporting pipeline (CLiSeq Interpreter) analyzes the data in under an hour, with results easily accessible for visualization."

Contact Person: Priyadarshini Pande

Stall ID: 02-078-2-S

Category of Innovation: NGS>>02. Diagnosis of TB and DR-TB



Innovation ID:131

Title of Innovation: Omega TB

Organization: HaystackAnalytics Pvt. Ltd.

Description: The Omega TB test by HaystackAnalytics is a whole genome sequencing solution that combines the use of short-read sequencing with automated genomic analysis to generate actionable reports. Such an approach overcomes the limitations of conventional drug susceptibility testing in terms of being comprehensive, having a faster TAT and being more affordable.

Product highlights:

- Drug susceptibility profile for 18 antibiotics
- Detects other pathogens including non-tuberculous mycobacteria
- Detects mixed infections with multiple strains and comprehensive DST is provided"

Contact Person: Dr. Anirvan Chatterjee

Stall ID: 02-077-2-S

Category of Innovation: NGS>>02. Diagnosis of TB and DR-TB



Innovation ID:90

Title of Innovation: SPIT SEQ: Culture-free whole genome sequencing based test for TB patients

Organization: MedGenome Labs Ltd

Description: MedGenome developed India's first targeted WGS (Whole Genome Sequencing) test for tuberculosis called SPIT SEQ. It is a next generation sequencing (NGS) based, culture-free, whole genome sequencing test for TB. It can confirm diagnosis of TB as well as identify the mutations that are likely to cause drug resistance – one of the most common causes of TB-linked deaths. Existing TB molecular tests had a limitation of covering resistance to only a few drugs, but MedGenome's SPIT SEQ test covers all drug resistance markers, both reported and novel.

It is a targeted whole genome sequencing method wherein the clinical samples are not subject to conventional culture method. This aspect of SPIT SEQ makes this test rapid and one of a kind in India. A unique feature of SPIT SEQ is that the entire length of the genome (~4.4Mb) of *Mycobacterium tuberculosis* is sequenced which facilitates detection of novel mutations. Pulmonary samples and extrapulmonary samples like sputum, bronchoalveolar lavage, CSF, pericardial fluid, synovial fluid, pus, gastric lavage, aqueous humor etc.

Contact Person: Dr Gunisha Pasricha

Stall ID: 02-076-2-D

Category of Innovation: NGS>>02. Diagnosis of TB and DR-TB



Innovation ID:132

Title of Innovation: Molecular Platforms for RTPCR and POCT based MTB detection & DST in clinical Samples for rapid detection & extensive screening

Organization: Huwel Lifesciences Pvt Ltd

Description: The MDRTB Detection Kit and UniAmp Device provide rapid, highly sensitive solutions for TB diagnosis and drug resistance detection.

MDRTB Detection Kit: An extraction-free master mix for detecting Mycobacterium tuberculosis (MTBC) in diverse sample types, targeting three MTB genes (IS6110, IS1081, MPT64) with 100% clinical specificity. It detects both wildtype and drug-resistant TB by identifying mutations in *rpoB*, *katG*, and *inhA* associated with Rifampicin (RIF) and Isoniazid (INH) resistance. The assay ensures high clinical sensitivity and includes internal controls for accuracy, with a 60-minute runtime.

UniAmp Device: A portable, point-of-care NAAT-based system that detects Mycobacterium tuberculosis in under 30 minutes, with results comparable to qPCR. Its cartridge-based design ensures contamination-free testing, offering 100% sensitivity and specificity. The system provides a cost-effective, decentralized solution for faster TB diagnosis and treatment initiation.

Together, these technologies offer fast, accurate TB and drug resistance detection, making diagnostics more accessible, particularly in resource-limited settings.

Contact Person: Shesheer Kumar

Stall ID: 02-061-1-S

Category of Innovation: New Rapid Mol Test>>02. Diagnosis of TB and DR-TB



Innovation ID:347

Title of Innovation: M10 MTB diagnosis platform

Organization: SD BIOSENSOR HEALTHCARE PVT LTD

Description: M10 MTB NTM is a cartridge based POC system for the differential detection MTB and NTM

Contact Person: Ayub Nawaz

Stall ID: 02-074-1-P

Category of Innovation: New Rapid Mol Test>>02. Diagnosis of TB and DR-TB



Innovation ID:134

Title of Innovation: Real Time RT-LAMP Analyzer

Organization: SmartQR Technologies Pvt Ltd

Description: Our device uses LAMP technology, an advanced nucleic acid amplification method operating under isothermal conditions. This eliminates the need for thermal cycling equipment, allowing rapid amplification of target DNA sequences with high sensitivity and specificity, even in low pathogenic load cases.

Key Features

1. Ready-to-Use Kit: Preloaded vials with master mix, primers, and reagents simplify testing; users only need to add DNA samples, reducing errors.
2. Integrated Device Design: An all-in-one device with an embedded heating chamber and 8-well strip blocks ensures uniform temperature. Controllable settings and auto-calibration enhance performance.
3. Rapid, Accurate Results: Completes the diagnostic process in 45 minutes, displaying immediate results on-screen with patient details.
4. High Sensitivity and Specificity: Detects as few as a single nucleic acid copy, ensuring early MTB detection. Multi-primer design minimizes false positives.
5. User-Friendly Interface: Intuitive design reduces manual intervention, accessible to healthcare providers of varying expertise.
6. Cost-Effective: Affordable compared to traditional molecular tests, suitable for widespread use in resource-limited settings.
7. Future Development: Lyophilized reaction tubes will improve usability in low-resource areas, enabling room temperature storage.
8. Digital Integration: AI-based result analysis and automated reporting streamline diagnostics. Data is securely stored and managed through a digital portal, enabling remote monitoring.

Contact Person: Sambit Ghosh

Stall ID: 02-062-1-S

Category of Innovation: New Rapid Mol Test>>02. Diagnosis of TB and DR-TB



Innovation ID:314

Title of Innovation: PathoDetect PCR Kits with Resistance Detection

Organization: Mylab Discovery Solutions

Description: PathoDetect PCR Kits with Resistance Detection: The PathoDetect kit, combined with the Mylab Compact device platform, addresses gaps in tuberculosis testing. The PathoDetect MTB RIF & INH Resistance Detection Kit provides comprehensive testing by detecting MTB, INH, and RIF resistance in a single test, ensuring efficient patient diagnosis. Endorsed by CDSCO, National TB Expert Committee, and ICMR: Ensuring Reliability and Improved Healthcare Outcomes

Contact Person: Gautam R. Wankhede

Stall ID: 02-072-1-S

Category of Innovation: New Rapid Mol Test>>02. Diagnosis of TB and DR-TB



Innovation ID:244

Title of Innovation: Hi PCR MTB NTM Probe PCR Kit

Organization: HiMedia Laboratories Private Limited

Description: The Hi PCR MTB NTM Probe PCR Kit uses real time PCR to amplify bacterial DNA and detect MTB and NTM via fluorescent hydrolysis probes. It includes primers targeting MTB specific regions and conserved mycobacterial genes for differentiation.

Contact Person: Dr. Aniket Prabhudesai

Stall ID: 02-071-1-S

Category of Innovation: New Rapid Mol Test>>02. Diagnosis of TB and DR-TB



Innovation ID:200

Title of Innovation: MERINAT MTB MDR Assay (POC)

Organization: Meril Diagnostics PVT. LTD.

Description: Performance evaluation of DSI TB RNA SAT Kit (Cat. No. D-TBRNA) manufactured by M/s Dia Sure Immunodiagnostic LLP

To find the sensitivity and specificity of DSI TB RNA SAT Kit against Genexpert MTB kit.

Contact Person: Apurv Solanki

Stall ID: 02-070-1-S

Category of Innovation: New Rapid Mol Test>>02. Diagnosis of TB and DR-TB



Innovation ID:194

Title of Innovation: TB RNA PCR kit for detection of Active TB

Organization: Dia Sure Immunodiagnostic LLP

Description: The DSI TB RNA kit is an isothermal amplification and testing assay, using Simultaneous Amplification and Testing (SAT) method. SAT accomplished simultaneously using M-MLV reverse transcriptase, T7 RNA polymerase and optimized probe techniques. Specific primers and fluorescent probes are designed in the conserved regions of TB. The reverse transcriptase is used to produce a DNA copy of the target nucleic acid (RNA), while the T7 RNA polymerase produces multiple RNA copies from the DNA copy. Optimized probe with fluorescent labels bind to these RNA copies specifically to produce fluorescence, which can be captured by a test instrument.

Contact Person: Gaurav Saraf

Stall ID: 02-069-1-S

Category of Innovation: New Rapid Mol Test>>02. Diagnosis of TB and DR-TB



Innovation ID:190

Title of Innovation: TBFYND: Accelerating the End of TB with a Rapid, Reliable Early Screening Kit

Organization: Acrannolife Genomics Private Limited

Description: TBFYND is a groundbreaking, cost-effective screening kit engineered to transform Tuberculosis (TB) diagnostics across India. Leveraging WHO-endorsed Loop Mediated Isothermal Amplification (LAMP) technology, TBFYND delivers rapid, accurate results in under 60 minutes, enabling early detection that not only curtails disease transmission but also significantly improves patient outcomes by reducing TB-associated morbidity and mortality.

Conceptualized with resource-limited settings in mind, TBFYND's user-friendly design allows minimally trained healthcare workers to perform high-quality molecular testing. Its compact, portable nature makes it ideally suited for deployment in primary healthcare centers, district hospitals, and outreach clinics, significantly expanding access to TB testing services in both rural and semi-urban areas.

Moreover, TBFYND's affordability democratizes state-of-the-art diagnostics, ensuring that every segment of the population can benefit from rapid and reliable TB detection. By streamlining the diagnostic process, TBFYND alleviates the pressure on healthcare facilities and personnel, enabling more efficient patient management and optimal resource allocation.

With sensitivity and specificity rates surpassing 95 percent and 98 percent respectively, TBFYND is not just an innovation its a paradigm shift in TB management

Contact Person: Dr. Pavan Kumar Bapatla

Stall ID: 02-068-1-S

Category of Innovation: New Rapid Mol Test>>02. Diagnosis of TB and DR-TB



Innovation ID:188

Title of Innovation: Pioneering Precision: Advancing Healthcare through Innovation

Organization: Q-Line Biotech Pvt Ltd

Description: Astira MDX is an advanced closed-system molecular diagnostic platform designed for the rapid and accurate detection of Mycobacterium tuberculosis MTB. This innovative system integrates automated sample processing real-time PCR amplification and detection in a single contamination-free cartridge ensuring a streamlined workflow with minimal operator intervention. The technology is built to enhance the efficiency and accessibility of TB diagnostics making it suitable for decentralized and point-of-care settings.

The multiplex RT-PCR assay within the Astira MDX system targets multiple MTB-specific genetic markers. Additionally a different testing kit MDR XDR will be developed to identify mutations associated with drug-resistant strains. This high-throughput fully automated system is designed to deliver results within 50 to 60 minutes with superior sensitivity above 98 percent and specificity above 99 percent. The device's closed-cartridge format significantly reduces contamination risk improving diagnostic accuracy and reliability. Its ability to detect MTB at very low bacterial loads as low as 10 CFU per mL makes it a valuable tool for early detection and effective disease management.

Contact Person: Amit Kumar Biswas

Stall ID: 02-067-1-S

Category of Innovation: New Rapid Mol Test>>02. Diagnosis of TB and DR-TB



Innovation ID:176

Title of Innovation: LAMP Assay as a rapid test for the diagnosis of Pulmonary TB towards NTEP integration

Organization: BGS Medical College Hospital

Description: The Loop-Mediated Isothermal Amplification (LAMP) has emerged as a newer revolutionary tool. LAMP is a nucleic acid amplification technique that amplifies DNA under isothermal conditions, eliminating the need for thermal cycling equipment required in polymerase chain reaction (PCR) methods. This makes LAMP particularly suitable for resource-limited settings where infrastructure and technical expertise may be lacking. The WHO has recently endorsed TB-LAMP as a replacement for sputum-smear microscopy in the diagnosis of pulmonary tuberculosis (PTB). There are several distinct advantages of LAMP over conventional methods such as the Rapid Turnaround Time of 1-2 hours, higher Sensitivity and Specificity even at low bacterial loads and in paucibacillary TB or in individuals with HIV co-infection, where conventional methods may yield false-negative results.

LAMP is also gaining highlight as the Point-of-Care Test, can be performed at primary health centers, without the need for sophisticated laboratory infrastructure or trained personnel. LAMP results can be interpreted visually, eliminating the need for specialized instrumentation. This decentralized approach facilitates early case detection, especially in underserved communities with limited access to healthcare facilities. We also believe that no single provider may skew the country's diagnostic market and equitable opportunity must be provided for newer and upcoming diagnostics. There must be adequate support for such early local evaluations with the TB elimination target around the corner. We want to see if TB-LAMP has the potential to perform as it is claimed to be, in and around Nelmangala Taluk, Bangalore with the support of the state NTEP team.

Contact Person: SUSHMA KRISHNA

Stall ID: 02-066-1-P

Category of Innovation: New Rapid Mol Test>>02. Diagnosis of TB and DR-TB



Innovation ID:166

Title of Innovation: Rapid Real-Time Isothermal NAT for Detection of mTBC and TB Drug Resistance in under 20 minutes

Organization: Eradicus

Description: CitaXpress TB is a rapid molecular diagnostic that detects mTBC DNA and TB Drug Resistance in under 20 minutes.

The technology is based on the principle of rapid real time isothermal amplification.

The diagnostic solution is compatible to be run on open RT PCR Instruments, and also on a near-patient compatible instrument 'iNAT'.

The assay procedure is low in complexity, which can be undertaken by a DMLT.

The fact that citaXpress can generate results in 20 minutes on RT-PCR instruments, it can immediately enhance the throughput of all RT PCR laboratories by over 500 percent for high-throughput TB diagnosis and surveillance.

The technology has been validated at NITRD, New Delhi and has been found to have over 95 percent diagnostic sensitivity and specificity, in detecting mTB in pulmonary specimens in comparison to MGIT and CBNAAT methods."

Contact Person: Anubhav Anusha

Stall ID: 02-065-1-S

Category of Innovation: New Rapid Mol Test>>02. Diagnosis of TB and DR-TB



Innovation ID:165

Title of Innovation: MTB DETECTION IVD KIT

Organization: AGAPPE DIAGNOSTICS

Description: The kit is intended for the detection of Mycobacterium Tuberculosis from sputum samples. Developed by industry academia collaboration with Sree Chitra Tirunal Institute for Medical Sciences and Technology (SCTIMST), Trivandrum and Agappe Diagnostics LTD. The kit Works based on Loop Mediated Isothermal Amplification (LAMP) technology which is more simple and faster than conventional PCR technology.

The Kit includes both the reagents for TB DNA extraction and TB LAMP assay. Limit of detection of the kit is 50 copies per reaction and positive result can be visible from 10 minutes once the amplification reaction starts. The reactions are in single vial lyophilized format, no need of complex master mix preparation. Total 16 Samples can be tested in a single run in Mispa Lume LAMP analyzer and 96 samples in Real time PCR systems convenient for large population screening in short time. Only MTB positive samples from screened population need to be tested for expensive drug resistance tests'

Contact Person: JOFY PAUL K

Stall ID: 02-064-1-S

Category of Innovation: New Rapid Mol Test>>02. Diagnosis of TB and DR-TB



Innovation ID:304

Title of Innovation: Paper-based Rapid Screening Platform for Drug Susceptibility testing for Mycobacterium Tuberculosis

Organization: Microfluidics Laboratory, IIT Kharagpur

Description: Timely and accurate diagnosis of bacterial drug resistance is crucial to preventing severe patient outcomes. Given the risks of resistance, early detection is essential not only for effective treatment but also to minimize recurrence and aid in disease control. Globally, diagnosing drug-resistant tuberculosis is a top priority to mitigate its long-term impact. Currently, the most reliable method relies on liquid media, delivering results in about 14 days. However, these tests are costly and require specialized laboratory facilities with strict biosafety measures.

We optimize a paper-based microfluidic platform for the detection of M. tuberculosis. Our methodology involves drug susceptibility testing with the culture filtrate and LRP assay protocol. We exploit the paper-based platforms for the testing of ~ 50 cultures of M. tuberculosis isolates. The key advantage of the developed platforms is fast, easy and inexpensive detection; it provides the results within ~ 3 hours, while the consumption of the necessary reagents is ~50 micro-liters. Mycobacteriophages are the class of viruses known to specifically infect mycobacteria. Techniques involving mycobacteriophages have been developed and evaluated for primary detection and thereafter for drug susceptibility testing. Currently available techniques involve performing drug susceptibility testing from the primary cultures which requires a minimum of 7 to 28 days based on the associated protocols. The fastest approach even takes ~7 days, requires very expensive reagents and sophisticated infrastructures. From recent literature, a microfluidics-based approach seems to be an effective tool to resolve the aforesaid concerns. Here, we propose a procedure which is very economical and will be able to diagnose rifampicin and isoniazid susceptibility as early as within ~3 hours."

Contact Person: Dr. Shantimoy Kar

Stall ID: 02-084-9-P

Category of Innovation: Rapid Drug Resistance Test>>02. Diagnosis of TB and DR-TB



Innovation ID:79

Title of Innovation: Detection of Drug-Resistant Tuberculosis (DR-TB) Using Multiplex Targeted Sequencing

Organization: University of Delhi

Description: The newly developed multiplex amplicon-based targeted sequencing method offers a solution to the limitations of current molecular diagnostics for tuberculosis (TB). Unlike traditional tests that require multiple procedures, this method allows for the simultaneous detection of TB and comprehensive drug-resistance profiling across both first- and second-line drugs, including newer agents like Bedaquiline and Linezolid.

This approach uses multiplex PCR amplification of genomic regions linked to drug resistance, followed by high-throughput sequencing of the pooled amplicons. It can process up to 48 samples in approximately 48 hours using a benchtop sequencer. Preliminary evaluations have shown strong concordance with existing molecular tests and phenotypic drug susceptibility testing (DST).

A key advantage is its ability to detect low-frequency mutations and hetero-resistant populations, providing higher resolution and more accurate resistance profiling. Efforts are also underway to optimize the method for direct application on sputum samples, eliminating the need for culture and further reducing diagnostic time.

This technology, currently at TLR4 level, has the potential to revolutionize TB diagnostics, especially in high-burden settings. It aligns with the WHO's "Seq & Treat" initiative and supports global efforts to combat extensively drug-resistant TB (XDR-TB). The innovation promises to significantly enhance diagnostic efficiency and precision, particularly in resource-limited regions, contributing to global TB elimination efforts.

Contact Person: Amita Gupta

Stall ID: 02-075-2-P

Category of Innovation: NGS>>02. Diagnosis of TB and DR-TB



02.POPULATION BASED SCREENING



Innovation ID:17

Title of Innovation: Xray AI CAD software for detection and differentiation of TB

Organization: ICMR-NIRT

Description: The AI-based Computer-Aided Detection (CAD) system, developed through a collaboration between C-DAC and ICMR-NIRT, uses advanced deep learning models to classify chest X-ray images for detecting tuberculosis (TB) and its mimics. The system supports clinicians, medical officers, and healthcare providers, enabling prompt referrals to the National Tuberculosis Elimination Program (NTEP). Early diagnosis through this system is crucial to reduce TB transmission and mortality, playing a vital role in TB elimination efforts.

The web-based diagnostic tool, XRAYCAD, uses AI to assist in interpreting chest X-rays. It was initially tested using open-access data from the National Institute of Health (NIH) and Chexpert, with subsequent fine-tuning for TB-specific radiographic features. The system includes image preprocessing, deep neural network training, and model validation to ensure accurate detection of TB and its differentiation from other pulmonary diseases.

Key features of the system include:

- Focus on TB-specific characteristics to minimize background noise.
- Linking X-rays from culture-proven TB patients to track progress before, during, and after treatment.
- Use of real-world X-ray data for easy future implementation in field settings.
- The software is free for ICMR institutes and is currently undergoing Phase 1 validation, with external validation expected soon. The system is scalable and cost-effective, making it suitable for use in diverse healthcare environments across India, even in resource-constrained settings. It requires minimal infrastructure, such as digital X-ray machines and internet connectivity.
- While the system's sensitivity is high, its specificity is around 70%, with some inherent noise in X-ray interpretation, like vascular markings or spinal curvatures. These issues are common across X-ray software and are being addressed.
- This innovation, supported by a collaboration between NIRT and C-DAC, offers a scientifically validated and scalable solution for TB detection. It has the potential to significantly impact TB elimination efforts, both in India and globally.

Contact Person: Dr. Gopalan Narendran

Stall ID: 01-001-1-D

Category of Innovation: Detect>>01. Population Based Screening>>Ai Xray CAD



Innovation ID:73

Title of Innovation: AI Based Last Mile screening

Organization: Corporeal Health Solutions Private Limited

Description: CHS has proposed a government-patented solution aimed at improving tuberculosis (TB) and lung disease diagnosis in rural and remote areas. The solution involves using a two-wheeler to carry a handheld Digital X-Ray (DR) machine, along with AI-based diagnostic software, to perform door-to-door testing. Radiographers and NHM workers will be responsible for conducting the tests and providing the results to patients within minutes. The AI system assists radiologists by reviewing chest X-rays and providing diagnostic support. Once a diagnosis is made, patients are referred for further testing and treatment.

This mobile and cost-effective diagnostic model is designed to significantly reduce testing and diagnosis time, making healthcare more accessible, particularly in underserved areas. In addition to quick diagnostics, the system focuses on TB detection and includes additional steps for confirming AI-positive results, such as taking sputum samples and sending them to a designated lab for further testing. The use of a portable, battery-operated DR machine, combined with AI assistance, enables this solution to be highly adaptable and efficient, promoting rapid diagnosis, isolation, and treatment to help control disease spread.

Contact Person: P Hari Haran

Stall ID: 01-002-1-D

Category of Innovation: Detect>>01. Population Based Screening>>Ai Xray CAD



Innovation ID:83

Title of Innovation: A Cutting-Edge AI-Powered Screening Software Solution to spot out Multi -Chest Complications and Osteoporosis

Organization: DIAGNO INTELLIGENT SYSTEMS PRIVATE LIMITED

Description: Diagno Intelligent Systems has developed a groundbreaking AI-powered Chest X-ray Tool, iOsteoporos Screen, designed to detect osteoporosis and fracture risk in the hip and spine. This tool is currently undergoing clinical validation. Furthermore, the development of a novel AI-powered chest X-ray tool, named the Smart CXRay Screen, is proposed to identify multi-chest complications and osteoporosis. This tool was built from the ground up using the extensive Chest X-ray 14 dataset (provided by the National Institutes of Health, NIH), which was labeled by radiologists and made publicly available.

The deep learning networks employed in the development include EfficientNetB3, EfficientNetB0, and InceptionV3. Additionally, a dataset of chest X-rays was collected and labeled with T-scores of hip and spine bone mineral density using a DXA bone densitometer to assess osteoporosis. The deep learning model that achieved the best performance demonstrated the highest accuracy in predicting tuberculosis (TB) and other chest-related ailments, including osteoporosis.

Our proof of concept indicated that the AI-powered tool can evaluate routine chest X-rays from patients in the risk group, accurately predicting TB, 13 other chest complications, and osteoporosis, with an average area under the curve (AUC) of 0.805. However, further training, validation, and testing on additional datasets are still required to enhance its performance.

Contact Person: DR MRS FELIX ENIGO V S

Stall ID: 01-003-1-D

Category of Innovation: Detect>>01. Population Based Screening>>Ai Xray CAD



Innovation ID:99

Title of Innovation: qXR

Organization: Qure.ai Technologies Private Limited

Description: qXR is an AI-powered chest X-ray interpretation tool developed by Qure.ai. Trained on over 9 million scans, it provides pre-read assistance in less than 20 seconds, detecting abnormalities across the lungs, heart, pleura, mediastinum, bones, and diaphragm. qXR has been deployed in over 90 countries across 3,100+ sites, processing more than 10.7 million scans. It has achieved a 40% reduction in turnaround time for reporting by classifying normal X-rays with a 99% negative predictive value. The tool supports multilingual interfaces and can be deployed on cloud or on-premise, making it adaptable to various healthcare settings globally.

Contact Person: Dr. Shibu Vijayan

Stall ID: 01-004-1-D

Category of Innovation: Detect>>01. Population Based Screening>>Ai Xray CAD



Innovation ID:111

Title of Innovation: Genki

Organization: Deeptek Medical Imaging Pvt Ltd

Description: Genki is an AI-powered lung health screening tool developed by DeepTek. It analyzes chest X-rays within seconds to automatically screen for tuberculosis (TB) and other lung pathologies from digital chest radiographs. Genki has been deployed in various healthcare settings globally, including India, Thailand, Mongolia, Philippines, Tunisia, and Indonesia, enhancing diagnostic accuracy and efficiency. The solution has screened more than 500,000 individuals, significantly increasing TB detection rates. Genki has received regulatory approvals, including US FDA clearance, CDSCO approval in India, and Thai FDA approval.

Contact Person: Ritika Taki

Stall ID: 01-005-1-D

Category of Innovation: Detect>>01. Population Based Screening>>Ai Xray CAD



Innovation ID:195

Title of Innovation: DXPro

Organization: Indian Institute of Technology Guwahati

Description: DXPro: AI-Powered Portable Diagnostic Tool for TB Eradication in India:

TB remains a significant public health concern in India, affecting millions of people each year. Existing diagnostic tools are often cumbersome, expensive, or inaccessible to those who need them most. DXPro aims to address this gap by developing an innovative, AI-powered portable diagnostic tool that can accurately diagnose TB and other lung-related conditions.

DXPro is in Basic device designing stage and has been validated through analysis and simulation. We have developed a deep understanding of the technology requirements, Market needs and feasibility of the project. DXPro basically extracts different features from the chest X-ray image using various image processing techniques such as image enhancement, segmentation and then uses the extracted features as an input for our specialized ML deep learning based algorithms to diagnose the pathological condition and then depending on the condition it generates a report in a predefined format such that the report generated is accurate and reliable.

Key Features: Embedded hardware design for seamless integration

- Real-time image enhancement and processing
- Advanced AI-powered diagnostic capabilities
- Scalable architecture for easy deployment in various clinical settings, including portable diagnostic labs
- Compact size and energy efficiency for use in remote or resource-constrained areas
- Impact in India:
- DXPro has the potential to significantly improve TB diagnosis and treatment outcomes in India by:
- DXPro is designed for deployment in portable diagnostic labs or other mobile health platforms, enabling rapid and reliable diagnosis of TB and other lung-related conditions in remote areas. This innovative solution has the potential to transform healthcare delivery in underserved communities across India."

Contact Person: Naman Jain

Stall ID: 01-006-1-D

Category of Innovation: Detect>>01. Population Based Screening>>Ai Xray CAD



Innovation ID:214

Title of Innovation: AI Enable TB CAD Software

Organization: MERIL DIAGNOSTICS PRIVATE LIMITED

Description:

Contact Person: BHAUMIK DAVE

Stall ID: 01-007-1-D

Category of Innovation: Detect>>01. Population Based Screening>>Ai Xray CAD



Innovation ID:227

Title of Innovation: RespAI - AI-Powered Chatbot for Chest X-Ray Interpretation

Organization: GM University, Davangere

Description: RespAI is an innovative chatbot-based AI tool designed to interpret chest x-rays and provide insights into various lung health conditions. The AI model will analyse x-ray images and the chatbot will deliver user-friendly explanations and actionable recommendations. This solution aims to enhance diagnostic accuracy, speed, and accessibility, particularly in underserved regions.

Contact Person: Sandhya R Savanur

Stall ID: 01-008-1-D

Category of Innovation: Detect>>01. Population Based Screening>>Ai Xray CAD



Innovation ID:25

Title of Innovation: Forced Cough Vocalization Signal Data Signatures in Screening TB- AI based Clinical DSS

Organization: Dr RPGMC Tanda Kangra

Description: Audible Health AI, Inc. has created DxPro. This innovative Artificial Intelligence powered clinical decision support software uses signal data signatures from forced cough vocalizations to screen for active pulmonary tuberculosis in real time. DxPro requires no specialized personnel, reagents, bodily fluids, or tissues, making it scalable and cost effective. It aligns with many of the WHO's REASSURED criteria for new diagnostic devices, offering real time connectivity, ease of use , affordability, rapid results, equipment free operation, and deliverability. A planned clinical trial will assess DxPro's accuracy in screening for active TB using SDS. The trial will also gather user feedback from healthcare providers to evaluate the device's usability in point of care settings. DxPro itself is a CDSS composed of software subroutines that interact with a proprietary SDS database, employing AI to analyze forced cough vocalization signal data signatures for TB screening. It is intended as an AI based tool for screening respiratory illnesses, specifically TB.

Contact Person: Dr Nidhi Chauhan

Stall ID: 01-009-3-D

Category of Innovation: Detect>>01. Population Based Screening>>AI-Respiratory Sound analyser



Innovation ID:38

Title of Innovation: TimBre - An AI & Acousticsqrespiratory health screening application

Organization: Docturnal Inc

Description: Docturnal provides Acoustic and AI Screening Solution for Lung Ailments that are non-invasive and point of care offering real time results. Ailments covered are TB, Pneumonia and noninfectious such as Asthma and COPD AND additional parameters such as Dyspnea, productive and nonproductive cough texture. TimBre is a low cost solution and is extensible for other lung ailments.

Contact Person: rahul Pathri

Stall ID: 01-010-3-D

Category of Innovation: Detect>>01. Population Based Screening>>AI-Respiratory Sound analyser



Innovation ID:74

Title of Innovation: Swaasa AI Platform for screening and monitoring of pulmonary tuberculosis.

Organization: Salcit Technologies Pvt Ltd

Description: "Swaasa AI Platform as a Point of Care (PoC) screening, monitoring and surveillance solution for pulmonary tuberculosis (PTB), using cough sound and advanced artificial intelligence technology, can be deployed at scale in resource limited settings easily.

The recent application of Artificial Intelligence (AI) and advances of ubiquitous computing for respiratory disease prediction has created an auspicious trend and myriad of future possibilities in the medical domain. There is an expeditiously emerging trend of Machine learning (ML) and Deep Learning (DL)-based algorithms exploiting cough signatures.

Swaasa is not an incremental innovation to any existing method for lung assessment. It is not like making portable and economical spirometers, digital stethoscopes etc. Instead, it is a disruptive innovation that needs only a connected device (mobile phone) to achieve the same results.

Swaasa is also enhanced to detect the likely presence of pulmonary tuberculosis. Using audiometric analysis and machine learning Swaasa AI Platform can decode the unique signature of cough to detect likely presence of Pulmonary Tuberculosis. Swaasa AI platform addresses the gap in screening and prioritizing at-risk patients for PTB based on the signature cough sound and symptomatic information provided by the patients.

Contact Person: Narayana Rao Sripada

Stall ID: 01-011-3-D

Category of Innovation: Detect>>01. Population Based Screening>>AI-Respiratory Sound analyser



Innovation ID:95

Title of Innovation: AI based cough detection device

Organization: Team Surakshay

Description: The device uses a mobile phone microphone to record cough sounds, analyzed with Mel-Frequency Cepstral Coefficients, Convolutional Neural Networks, and Artificial Neural Networks. This combination allows real-time assessments of TB infection probability based on acoustic features.

MFCC-Captures sound characteristics to distinguish TB related coughs.

CNN-Extracts audio patterns, enhancing generalization across samples.

ANN-Learns complex input patterns, ensuring robust classification.

Model development is based on the DREAM CODA Dataset, comprising 724,694 cough recordings from 1,105 patients across seven countries.

Contact Person: Taanya Talreja

Stall ID: 01-012-3-D

Category of Innovation: Detect>>01. Population Based Screening>>AI-Respiratory Sound analyser



Innovation ID:167

Title of Innovation: SvasYantra, an AI based wearable smart device to detect TB non invasively using exhaled breath

Organization: Memandis

Description: Patients blow into SvasYantra,, a wearable device that combines gas sensors, chemical receptors, sensing matrices based on nanomaterials and a computer algorithm based on multi model small breath foundation model, which then analyses the telltale signs of TB and lung infection. The device employs several sensors that are combined with a pattern recognition system to analyse and characterize sample derived complex VOCs without separation of the mixture into individual components. A patient's digital twin is created using olfactory fingerprint generated from SvasYantra, that enables personalized care and treatment protocol through customization of range and selectivity of the applied sensors to targeted disease VOC. Development of SvasYantra based on breath profile of the targeted TB breath markers will become a clinical and laboratory diagnostic tool because our device is significantly smaller, easier-to-use, and less expensive than spectrometry or spectroscopy

Contact Person: Naveen Kumar Surya

Stall ID: 01-013-3-D

Category of Innovation: Detect>>01. Population Based Screening>>AI-Respiratory Sound analyser



Innovation ID:175

Title of Innovation: AiSteth - Ai-enabled Smart Stethoscope for Screening TB

Organization: Ai Health Highway India Pvt Ltd

Description: AiSteth Lung Sound Analysis Platform collects 60 to 90 seconds on lung sounds from 10 to 12 sites combined with COPD assessment questionnaire accompanying lab reports gives insights to the healthcare professional about the presence or absence of Adventitious Lung Sounds. AiSteth is a smart stethoscope to screen detect and predict cardiorespiratory disorders It consists of 3 key components Device Data and Intelligence

- a. Device A smart stethoscope that picks up the heart lung sounds
- b. Data Mobile Applications A mobile app Android and iOS that records these heart lung sounds data and converts into visual wave formats for smart interpretation
- c. Intelligence A cloud based intelligence build using start of the art AI ML models that can screen detect abnormal heart lung sounds and helps the doctor in diagnosis

AsMAP AiSteth Murmur Analysis Platform for Murmur Detection and Screening Valvular Heart Disorders has Murmur detection accuracy of 9834 percent with specificity of 9973 percent in the Pilot Study We have screened more than 48000 patients across 19 states of India

Contact Person: Dr (Maj) Satish S Jeevannavar

Stall ID: 01-014-3-D

Category of Innovation: Detect>>01. Population Based Screening>>AI-Respiratory Sound analyser



Innovation ID:229

Title of Innovation: Cough against TB

Organization: Wadhwani Institute for Artificial Intelligence

Description: AI enabled solution to assess the likelihood of Pulmonary tuberculosis based on solicited cough sounds, symptoms, and comorbidities, to enable early detection and treatment

Contact Person: Aparna Chaudhary

Stall ID: 01-015-3-D

Category of Innovation: Detect>>01. Population Based Screening>>AI-Respiratory Sound analyser



Innovation ID:333

Title of Innovation: AI-Powered Baby Monitoring System

Organization: asksummu

Description: The AI-Powered Baby Monitoring System is designed to help in the early detection of Tuberculosis (TB) in infants, who are highly vulnerable to severe infections. The system integrates real-time health tracking, AI-based respiratory analysis, and a custom mobile app to assist caregivers and healthcare professionals in identifying potential TB symptoms.

Key Features:

- Cough and Respiratory Monitoring:
 - Uses AI to detect persistent cough patterns and differentiates between normal baby sounds and signs of TB, alerting caregivers when necessary.
- Temperature and Fever Monitoring:
 - Tracks fever, a common TB symptom, and notifies caregivers when the baby's temperature exceeds 38°C.
- Facial Recognition & Symptom Detection:
 - Detects signs like facial pallor, weight loss, and fatigue, sending alerts if TB symptoms persist.
- Sleep and Activity Monitoring:
 - Tracks sleep quality and abnormal breathing patterns, providing insights into discomfort caused by TB symptoms.
- Mobile App for Remote Monitoring:
 - Displays live data, alerts, and historical records. Supports real-time video streaming, allowing doctors and caregivers to monitor and receive emergency notifications remotely.
- Smart Notifications:
 - Sends alerts via WhatsApp, SMS, and in-app notifications, reducing the need for hospital visits and allowing remote consultations.
- The system is designed for use in homes, hospitals, and TB screening centers to facilitate early intervention for potential TB cases in infants.

Contact Person: Aditya shivanand kandakur

Stall ID: 01-016-3-S

Category of Innovation: Detect>>01. Population Based Screening>>AI-Respiratory Sound analyser



Innovation ID:51

Title of Innovation: Mine 2 Ultraportable Handheld X-ray

Organization: Labindia Healthcare Pvt. Ltd.

Description:

MINE 2 is a ultraportable handheld x-ray device by Labindia Healthcare Pvt. Ltd. It produces minimal radiation, ensuring safety while delivering clear, high-quality digital X-ray images. Its compact size and lightweight design make it highly portable and easily deployable, even in challenging environments. The device is battery-operated, allowing for flexibility in areas with limited access to power. Additionally, the user-friendly interface simplifies operation, making it accessible to healthcare workers with varying levels of technical expertise.

Contact Person: Vivek Singh

Stall ID: 01-017-2-S

Category of Innovation: Detect>>01. Population Based Screening>>Handheld Xray



Innovation ID:58

Title of Innovation: ProDigi Health Platform for TB screening with PRORAD ATLAS ULTRAPORTABLE Digital X-Ray system

Organization: PROGNOSYS MEDICAL SYSTEMS PRIVATE LIMITED

Description: ProDigi is an innovative health platform designed to revolutionize the medical ecosystem by facilitating seamless integration between software and hardware in healthcare settings. It is designed to enable an effective and efficient TB screening solution. It ensures safe and secure capture of Patient data while connecting the ProRad Atlas Ultraportable X-ray system with an AI for CXR analysis and TrueNat for a confirmatory molecular test. ProDigi also has the ability to enable a Tele consult for better care and planning of treatment of the TB affected patients.

PRORAD ATLAS ULTRAPORTABLE digital x-ray system is a state-of-the-art ultra-portable solution that comprises of high frequency x-ray generator that is microprocessor controlled for precise x-ray delivery, ergonomically and aesthetically designed unit with an LCD touch screen display of x-ray parameters and APR settings. It is Compact and lightweight X-ray imaging devices that are designed for use in a variety of settings, including emergency rooms, intensive care units, and remote or mobile clinical settings.

Contact Person: KRISHNA PRASAD VAJAPEYAM

Category of Innovation: Detect>>01. Population Based Screening>>Handheld Xray



Innovation ID:139

Title of Innovation: AI ENABLED ULTRAPORTABLE X-RAY SYSTEM

Organization: IATOME ELECTRIC INDIA PVT LTD

Description: This lightweight and portable X ray device is less than 3.5Kg enables immediate X-ray imaging in even the most remote areas. This machine eliminates the need for moving the patients to centralized facilities. Its High portability is crucial for reaching vulnerable populations facilitating wide and early case detection.

- The combined weight of the whole system is less than 12 Kg
- Ultraportable X ray weight is less than 3.5 Kg
- Tripod stand weight is less than 2.2 Kg
- The Flat panel Detector weight with battery is less than 4.0 Kg
- The Laptop weight is less than 2.0 Kg"

Contact Person: Satheesh K

Stall ID: 01-019-2-S

Category of Innovation: Detect>>01. Population Based Screening>>Handheld Xray



Innovation ID:187

Title of Innovation: MIN X and MIN X Pro: Ultraportable lightweight hand-held xray machine

Organization: STAR NUKE CONSULTING ENGINEERING SERVICES PRIVATE LIMITED

Description: The MIN X and MIN X Pro X Ray Modules by STARNUKE are advanced indigenous solutions above 80 percent local content These modules showcase our commitment to local manufacturing reducing overseas dependency and promoting self sufficiency in the X ray technology sector

Key components such as the high frequency voltage generator are fully designed and manufactured at our Jaipur facility with only select electronic components IGBT MOSFET capacitors etc sourced from local suppliers in Bangalore and Delhi The process of transformer winding leakage testing vacuuming oil filling and final calibration is performed inhouse Additionally the program software and firmware Software Development Kit SDK are developed by STARNUKE ensuring optimized performance and user interface integration

The MIN X and MIN X Pro modules also benefit from locally produced PCBs which undergo rigorous quality control at a Delhi based facility and custom designed enclosures manufactured using STARNUKE owned dies at a local injection molding company These local manufacturing practices enable quicker repairs faster part availability and enhanced customization

Contact Person: Mr. Balram Singh Rajora

Stall ID: 01-020-2-S

Category of Innovation: Detect>>01. Population Based Screening>>Handheld Xray



Innovation ID:217

Title of Innovation: Innovative bundled-up solution for door-to-door screening of suspected TB patients using Hand Held X-ray and MTB MDR PCR kit

Organization: Trivitron Healthcare Pvt Ltd

Description: Trivitron Healthcare offers a comprehensive TB detection solution through imaging and diagnostic technology. The company's Research and Development team has created the Handheld X-Ray BIS, an AERB-approved device designed for mass TB screening, particularly in remote areas where access to professional radiographers may be limited. This handheld X-Ray machine can be operated without the need for a professional radiographer, making it highly adaptable for community screening.

The proposed model involves door-to-door screening using the compact and digital handheld X-Ray, followed by AI-assisted identification of suspected TB cases. After AI detection, the results are reviewed by a radiologist or pathologist for confirmation. Patients who are identified as suspected TB cases will then be further tested using the MTB MDR PCR kit, developed and manufactured by Trivitron, for definitive diagnosis.

The handheld X-Ray features an inbuilt 7-inch screen, allowing for immediate viewing of the X-Ray before it is stored or uploaded to the cloud. It is DICOM-enabled, meaning it can easily integrate with AI systems for enhanced diagnostics. After an initial positive result from AI, reconfirmation can be carried out by a radiologist, and a parallel blood test using the MTB MDR PCR kit can verify the diagnosis.

This solution enables rapid, on-the-ground TB detection with minimal infrastructure, making it particularly valuable for use in underserved and remote regions, contributing to quicker diagnosis, treatment, and disease control.

Contact Person: Dr Suresh Thakur

Stall ID: 01-021-2-P

Category of Innovation: Detect>>01. Population Based Screening>>Handheld Xray



Innovation ID:263

Title of Innovation: ERAY SMART-5HS Portable Handheld X-Ray Machine

Organization: Edusoft Healthcare Private Limited

Description: The ERAY SMART-5HS is a lightweight (3.5 kg) portable handheld X-ray machine designed for diverse medical settings, including emergency rooms, urgent care centers, disaster sites, patient homes, elder care facilities, and clinics. It offers high-quality digital imaging with a built-in lithium polymer battery capable of capturing up to 100 images on a single charge. The device features user-friendly controls with buttons on both sides for one-finger operation and a durable LED display for easy navigation. Additionally, it incorporates AI capabilities to detect abnormalities such as tuberculosis with over 95% accuracy, as well as other lung and cardiovascular issues.

Contact Person: Shammi Gupta

Stall ID: 01-022-2-S

Category of Innovation: Detect>>01. Population Based Screening>>Handheld Xray



Innovation ID:317

Title of Innovation: MyBeam Handheld Portable X-ray

Organization: Mylab Discovery Solutions

Description: MyBeam Handheld Portable X-ray: A compact and advanced X-ray solution for TB screening at testing sites.

Contact Person: Gautam R. Wankhede

Stall ID: 01-023-2-S

Category of Innovation: Detect>>01. Population Based Screening>>Handheld Xray



Innovation ID:350

Title of Innovation: Low Xray Dose with excellent Diagnostic Image Quality

Organization: Fujifilm India Pvt Ltd

Description: "As a part of continuous innovation Fujifilm is pleased to introduce its state-of-the-art portable digital radiography solution FDR Xair. In combination with High sensitivity detector it ensures high image quality, low patient dose & ensures accurate diagnosis. FDR Xair supports vendor neutral AI applications. FDR Xair is ideally suitable for radiology applications. This product meets all regulatory & quality norms which includes WHO guideline, AERB, CE, FDA etc. On top of this Fujifilm has the widest Global experience of handling TB Screening programs including India. In India we are proud to be a partner with NTEP initiative. In India we have participated in many TB screening programs & our screening model has been well appreciated & recommended at various level.

Xair is handheld portable Xray approx. weight 3.5kg. Unique design like camera.

Exclusive ISS Technology in the Detector to get high DQE & MTF with low Xray dose to patient. Own software with Dynamic Visualization II & Virtual grid further reduces the Xray dose and provide excellent Diagnostics Image quality."

Contact Person: Rajendra Tambe

Stall ID: 01-024-2-D

Category of Innovation: Detect>>01. Population Based Screening>>Handheld Xray



Innovation ID:248

Title of Innovation: Privacy-Preserving AI for Tuberculosis Diagnosis

Organization: ARTPARK, Indian Institute of Science (IISc), Bengaluru

Description: The Telangana government is advancing tuberculosis (TB) screening through a privacy-preserving AI (PPAI) initiative, leveraging multi-modal AI models to analyze chest X-rays without compromising patient confidentiality. This AI-driven approach aims to enhance early detection, track patient pathways, and improve TB management across 1,500 diagnostic centers, processing approximately 15,000 X-rays daily.

Key Features & Objectives:

1. **AI-Driven TB Detection:** The system integrates deep learning models like Deep CXR and homegrown AI algorithms to identify TB cases, even in asymptomatic or co-morbid patients, optimizing early diagnosis.
2. **Privacy-Preserving Federated Learning** – Ensures patient data remains securely within diagnostic centers by using enclave-based AI training, preventing data leakage.
3. **Cloud-Based Screening Platform** ARTPARK, in collaboration with the National TB Elimination Program (NTEP), hosts anonymized datasets on MEITY empaneled cloud providers, ensuring compliance with national data policies.
4. **Integration with NIKSHAY & EHR Systems** AI analyzes metadata from NIKSHAY, India's TB patient database, to detect TB hotspots and cold spots, enabling better resource allocation.
5. **Reversible & Irreversible Anonymization** Patient data remains identifiable during diagnosis but undergoes irreversible anonymization for research use.
6. **Decentralized Data Management** – Patient reports enable seamless data access across healthcare facilities with patient consent, improving continuity of care.

The project aligns with Ayushman Bharat Digital Mission (ABDM) architecture recommendations, using decentralized data management through consent-based mechanisms. Technology service providers will ensure diagnostic centers' data storage formats comply with ABDM standards.

Contact Person: Nishant Arvind Chavan

Stall ID: 01-025-5-P

Category of Innovation: Detect>>01. Population Based Screening>>Integrated Operations Model



Innovation ID:283

Title of Innovation: Rapid mobile TB screening and diagnostics unit

Organization: Apollo Telemedicine Networking Foundation

Description: Fujifilm India and Apollo Telemedicine Networking Foundation (ATNF), has launched a groundbreaking rapid chest X-ray TB screening initiative in a mobile unit, commencing in December 2024. This large-scale effort has successfully conducted 24,335 X-ray screenings across Morbi, Rajkot, Patan, Mehsana, Vyara, and Navsari in Gujarat, along with Keonjhar in Odisha, with each location surpassing more than 350 screenings per day. The Mobile TB Screening Unit is equipped with Fujifilm's advanced portable X-ray technology, significantly reducing the time required for TB detection. By integrating Digital Health Risk Assessment (HRA) and handheld X-ray screening, the program ensures a comprehensive and rapid diagnostic process. Designed to reach remote and underserved communities, it enhances accessibility to early TB detection and treatment, addressing one of India's most pressing public health challenges. A key highlight of this initiative is the Apollo-designed digital platform, which seamlessly integrates X-ray reports and tele-radiology services. This platform enables District TB Officers (DTOs) to access real-time diagnostic data, ensuring swift decision-making and treatment initiation. By leveraging cutting-edge technology and a digitally integrated workflow, this initiative is not just enhancing TB screening efficiency but also strengthening India's National TB Elimination Program. Through mobile, AI-powered, and telemedicine-enabled solutions, the program bridges healthcare gaps in hard-to-reach locations, reinforcing the collective fight against tuberculosis and ensuring that no community is left behind.

Contact Person: Mr. Premanand S

Stall ID: 01-026-5-P

Category of Innovation: Detect>>01. Population Based Screening>>Integrated Operations Model



Innovation ID:296

Title of Innovation: Integrated Camp Approach for TB Active Case Finding in Community Settings

Organization: William J Clinton Foundation (WJCF)

Description: WJCF, in partnership with the Central TB Division and State Governments, runs an Integrated Camps Approach for Active TB Case Finding (ACF) across 11 states and 33 districts using AI-enabled X-ray machines. This model improves TB detection in underserved communities by addressing access, cost, stigma, and fragmented services.

Key Features:

- Access: Mobile X-rays and vans bring diagnostic services to underserved areas.
- Cost: Free health services eliminate out-of-pocket expenses.
- Stigma: Camps are positioned as general health services to reduce TB stigma.
- Data Management: Real-time data capture and remote radiology ensure accurate and scalable data handling.
- Community Engagement:
- Camps target areas like urban slums, prisons, and tribal regions, with ASHAs engaging key populations. Panchayat involvement strengthens community messaging.
- Service Delivery:
- Integrated screening for TB, BMI, RBS, and BP.
- On-site sample collection with AI-enabled X-rays reduces follow-up loss.

Impact (as of Dec 31, 2024):

- 8,800 camps held, screening 700,000 people.
- 5,229 TB cases diagnosed, with high screening percentages for BMI (97%), RBS (76%), and BP (84%).

Contact Person: Shashwat Shrivastava

Stall ID: 01-027-5-D

Category of Innovation: Detect>>01. Population Based Screening>>Integrated Operations Model



Innovation ID:311

Title of Innovation: Community-Led Smart TB Care Initiative

Organization: TB Mukh Vahini

Description: The Community led Smart TB Care Initiative is a pioneering project designed to leverage digital innovations and community engagement for early TB detection, treatment adherence, and stigma reduction. This initiative envisions a decentralized, technology-enabled, survivor-led model that strengthens grassroots TB control efforts while enhancing healthcare access and efficiency.

Innovative Approach: The project integrates smart health technologies with community leadership to ensure real-time patient support, data-driven decision-making, and policy advocacy. The core innovation lies in the development of AI powered digital tools, mobile clinics, and survivor driven interventions to create a holistic TB response ecosystem.

Key Innovations

- AI-Enabled Smart TB Detection & Support App
- A mobile app using AI to analyze cough sounds and symptoms for early TB risk assessment.
- Chatbots providing personalized treatment reminders, symptom tracking, and nutritional guidance.
- TB Warrior Community Networks:
- Establishing community-led TB Surveillance Groups for case identification, stigma reduction, and patient mentoring.
- Training TB Champions to conduct door-to-door screenings and digital case reporting.
- Smart DOTS
- A telemedicine platform connecting patients with doctors and counselors.
- AI based video adherence tracking to monitor medication intake and prevent treatment dropout.
- Solar-Powered Mobile TB Clinics
- Deploying mobile TB clinics equipped with digital diagnostics to reach underserved areas.
- Utilizing portable GeneXpert machines for on-the-spot TB testing.
- Policy Advocacy & Data-Driven Governance
- Creating a real-time TB dashboard for government agencies to track treatment progress and supply chain issues.
- Engaging policymakers in evidence-based decision-making using data insights.
- Impact & Outcomes
- Fifty percentage increase in early TB detection through AI driven assessments.
- Higher treatment adherence via digital DOTS monitoring.
- Reduced stigma & improved healthcare access through community-led interventions.

This scalable, tech enabled approach transforms TB care into a proactive, patient centered, and community-owned health model."

Contact Person: Sudeshwar Kr Singh | **Stall ID:** 01-028-5-D

Category of Innovation: Detect>>01. Population Based Screening>>Integrated Operations Model



Innovation ID:69

Title of Innovation: Next Generation Colloidal Gold Based Immunoassay for Rapid and Specific Detection of Mycobacterium tuberculosis

Organization: University of Delhi

Description: The Mycobacteria Growth Indicator Tube (BACTEC MGIT)-based liquid culture method detects mycobacterial growth but does not differentiate Mycobacterium tuberculosis (Mtb) from non-tuberculous mycobacteria (NTM), necessitating additional confirmatory tests. To address this limitation, a diagnostic approach targeting Mtb-specific secretory proteins, MPT64 (Rv1980c) and a novel protein, MTcAg, encoded exclusively in the Mtb genome and absent in NTMs was developed. These proteins were cloned, expressed in E. coli, and purified. High-affinity monoclonal antibodies (four for each protein, with non-competing binding sites) were generated and utilized to develop a highly sensitive ELISA-based sandwich assay, followed by a rapid colloidal gold-based immunochromatographic assay for detecting these proteins in culture supernatants of M. tuberculosis H37Rv and clinical specimens.

This colloidal gold-based lateral flow assay, TBConfirm, was designed to specifically detect tuberculous mycobacteria. Licensed to SPAN Diagnostics, Surat, the assay received DCGI approval after rigorous evaluation at AIIMS (New Delhi) and P. Hinduja Hospital (Mumbai). However, following the acquisition of SPAN by Arkay Healthcare Inc., the product was not commercialized, and the licensing agreement expired.

The technology, currently at Technology Readiness Level (TRL) 6, has been evolved with further development, and can be advanced to commercialization within 18 months through optimization of formulations to enhance detection limits with industry collaboration and comprehensive clinical validation. While several diagnostic kits are used in India's TB Program to differentiate Mtb from NTM, TBConfirm has demonstrated superior performance in clinical evaluations.

Contact Person: Amita Gupta

Stall ID: 01-029-4-P

Category of Innovation: Detect>>01. Population Based Screening>>New Rapid Screening Test



Innovation ID:84

Title of Innovation: Non-sputum Antibody-detection based Point-of-care test for TB

Organization: Stellar Diagnostics India Private Limited

Description: Stellar has developed a POC test for active TB in the lateral flow format. The Stellar POC test uses blood from a finger-prick as a sample and is simple enough to be administered by health-care workers in peripheral settings, in private clinician clinics and in screening of communities at high risk for TB, such as house-hold contacts of infectious TB patients, residents of slums, HIV-infected individuals, patients with other lung diseases etc. The test is low-cost and simple enough to be used in infrastructure-less settings by first-contact providers in the community e.g. community health workers, informal providers and requires no electricity, refrigeration, access to clean water, and will need minimal, or even no training.

The Stellar TB POC test is based on over 2 decades of basic research conducted in the labs of Dr. Laal at NYU Langone Medical Center, New York. The POC test detects circulating antibodies directed against peptides derived from highly immunogenic M.tuberculosis specific cell-wall proteins. The parent M.tuberculosis specific cell wall antigens were identified, expressed by recombinant techniques, purified, characterized and validated to discriminate between latent and active TB, and elicit antibodies only during active TB infection. Immunodominant regions of the proteins that can be synthesized as peptides were identified on peptide microarrays or ELISA. Stellar has successfully translated the use of these peptides to a lateral flow format POC test. The affordability and simplicity of the Stellar test procedure makes deployment of the test a reality for high burden, resource challenged countries where TB is endemic.

In-lab validation of the POC test with over 1000 specimens is completed. Prospective Multicenter Field evaluation of feasibility and performance of the Stellar POC Test in intended settings of use is being initiated.

Contact Person: Stellar Diagnostics India Private Limited

Stall ID: 01-030-4-D

Category of Innovation: Detect>>01. Population Based Screening>>New Rapid Screening Test



Innovation ID:100

Title of Innovation: Aptamer based Nano-biosensor for diagnosis of Pulmonary Tuberculosis

Organization: Amity University Punjab Mohali

Description: This project aims to explore hitherto unknown role of HupB as a promising diagnostic marker

for detection of pulmonary Tuberculosis. HupB is an immunodominant antigen, present on the surface of Mycobacterium tuberculosis. In this project, a HupB aptamer based highly selective and sensitive electrochemical method for the detection of pulmonary tuberculosis will be developed. With the development of newer technologies, aptamers are now being employed as immunoglobulin replacements because they offer multiple advantages over antibodies, such as high stability, ease of synthesis and functionalization, no lot-to-lot variation, and shorter production time (Wang et al., 2012).

These aptamers possess an edge over antibodies as they can be selected for different target molecules (without considering the antigenic properties) ranging from smaller molecules such as antibiotics, organic dyes, peptides, metal ions, amino acids, polysaccharides to the larger ones like proteins, viruses, virus-infected cells, whole cells and bacteria (Pathania et al., 2017; Shangguan et al., 2008; Tang et al., 2009; Rajendran and Ellington, 2008).

Contact Person: Rajni Garg

Stall ID: 01-031-4-P

Category of Innovation: Detect>>01. Population Based Screening>>New Rapid Screening Test



Innovation ID:113

Title of Innovation: A biosensor for urinary LAM based Tuberculosis diagnosis or screening

Organization: IIT Madras

Description: The Biosensors Research Laboratory at IIT Madras has established a one-step, wash-free plasmonic fiber optic absorbance biosensor (P-FAB) technology capable of detecting analyte concentrations down to attomolar concentrations, precisely, 150 molecules in 25 micro litres. we reported the P-FAB strategy for mannosylated LAM (Man-LAM or Mtb LAM) detection down to attomolar concentrations (Biosensors and Bioelectronics 167 (2020) 112488). It involves a plasmonic sandwich immunoassay on a U-bent fiber optic sensor (U-FOS) probe with gold plasmonic (AuNP) labels functionalized with anti-Mtb LAM immunoglobulin M (IgM) and anti-Mtb LAM IgG respectively. P-FAB with a simple LED-photodetector pair, 200 μ m fused silica U-bent fiber probe and 60 nm (20x) AuNP labels gave LoDs down to 1 fg per mL and 10 fg per mL in the buffer and synthetic urine respectively. IIT Madras has also developed an affordable readout device and U-FOS cartridge to enable point-of-care diagnostics.

Contact Person: V V Raghavendra Sai

Stall ID: 01-032-4-P

Category of Innovation: Detect>>01. Population Based Screening>>New Rapid Screening Test



Innovation ID:184

Title of Innovation: Rapid TB LAM Test (Upgraded Version) for mass screening of TB in Urine

Organization: Ostic Pharma Pvt Ltd (SINE, IIT Bombay) and TUMAAS - Foundation for TB, Malnutrition and AIDS, Mumbai

Description: The current LAM urine test (Alere, Abbott, USA) demonstrates higher sensitivity and specificity in HIV co-infected tuberculosis (TB) patients, but shows significantly lower sensitivity (17-40%, with an average of 26%) in active TB patients. We propose an enhanced version of the LAM-based TB test, which is visual, qualitative, rapid, and affordable, aimed at mass TB screening using urine samples. This test provides results within 10 minutes, making it suitable for use in doctor's clinics and resource-limited areas, without requiring refrigeration during storage or transportation.

Lipoarabinomannan (LAM), a potential marker for active TB, is the focus of this test. LAM is a lipopolysaccharide found in mycobacterial cell walls, released by metabolically active or degenerating bacterial cells, and is present only in individuals with active TB. Urine-based testing offers several advantages over sputum-based tests, including easier sample collection, storage, and no infection control risks. The proposed test is a membrane-based assay that rapidly detects the LAM antigen in urine.

Our test is rapid (20-25 minutes) compared to the 8-12 weeks required for routine cultures, cost-effective (significantly cheaper than the Gene Xpert test at USD 20), and does not require specialized equipment. It is a point-of-care, user-friendly test that only requires a small sample of urine. This test is particularly useful for rural and resource-constrained settings where access to pathology or TB laboratories is limited

Contact Person: Dr. Vinay Saini

Stall ID: 01-033-4-S

Category of Innovation: Detect>>01. Population Based Screening>>New Rapid Screening Test



Innovation ID:185

Title of Innovation: Immunochromatographic Rapid Screening Test for all forms of Tuberculosis: A triage strategy

Organization: Aarupadi Veedu Medical College and Hospital, Pondicherry

Description: Individuals infected with TB often seek medical attention only after becoming severely ill, allowing the disease to inflict damage and transmit to others. Hence, proactive screening represents a vital strategy for early detection, confirmation of the disease, and establishing effective treatment protocols. Implementing a triage strategy utilising a rapid, simple, and highly sensitive lateral flow immunochromatographic test (RDT), similar to a blood glucose test, can facilitate this process. RDTs have proven instrumental in the control and elimination of various diseases globally, with their advantages being significant. Although serological tests for TB diagnosis have been discouraged by the WHO and the Government of India, the WHO encourages innovative screening tests utilising novel antigens for the rapid mass screening of at-risk populations. Those with positive triage tests will not be immediately classified as diseased but will be referred to appropriate NTEP centres, optimizing resources to focus on confirmed TB cases.

Contact Person: Prof. Sarman Singh

Stall ID: 01-034-4-S

Category of Innovation: Detect>>01. Population Based Screening>>New Rapid Screening Test



Innovation ID:344

Title of Innovation: Open RTPCR Based Assay for the detection and differentiation of MTB and NTM

Organization: NeoDx Biotech Labs

Description: NeoDx MTB and NTM Qualitative Real-Time PCR Detection Kit is a multiplex, TaqMan probe-based Real Time PCR assay for the specific detection of Mycobacterium Tuberculosis complex (MTBC) in DNA extracted from human sputum and extrapulmonary samples for initial diagnosis of tuberculosis along with detection of Pan mycobacterium target gene for screening the presence of non-tuberculosis mycobacteria (NTM) species. Internal Control is also detected along with target genes for assessing the validity of the run.

Contact Person: Dr. Prabhakar Kulkarni

Stall ID: 01-035-4-P

Category of Innovation: Detect>>01. Population Based Screening>>New Rapid Screening Test



Innovation ID:205

Title of Innovation: Breath Safe - Smart PPE for TB Detection and Prevention in Mines

Organization: WIM ZIMBABWE Women in Mining Zimbabwe

Description: "The ""Breath Safe"" Smart PPE is an innovative personal protective equipment designed to detect and prevent tuberculosis (TB) in high-risk mining environments. It integrates advanced sensor technology with wearable biosensors to monitor both the air quality and the health of miners in real-time.

The key feature of this PPE is its TB detection sensors that monitor for airborne TB particles in mining spaces, providing immediate alerts when dangerous levels of exposure are detected. This early warning system empowers miners to take immediate protective action and seek medical intervention, significantly reducing the risk of TB transmission.

Additionally, the wearable biosensors embedded in the PPE continuously track vital health signs, such as respiratory rate, heart rate, and body temperature, which are crucial indicators of TB infection. These sensors communicate data to both the miner and remote health monitoring systems, allowing for prompt detection of early symptoms and timely intervention.

The antimicrobial coating on the PPE ensures durability and protection against harmful bacteria, extending the equipment's lifespan and maintaining hygiene in the rugged mining environment. Designed to be lightweight and comfortable, the PPE allows for unrestricted movement, making it suitable for long shifts in harsh mining conditions.

By merging health monitoring with TB detection, the ""Breath Safe"" Smart PPE offers a proactive approach to TB prevention, improving the overall safety and health of miners, reducing the risk of TB outbreaks, and fostering a healthier mining community.

Contact Person: Faith Mutete

Stall ID: 01-036-7-P

Category of Innovation: Detect>>01. Population Based Screening>>PPE based screening



Innovation ID:220

Title of Innovation: Leveraging Whatsapp Chatbot Technology for Self Symptomatic TB Screening in the State of Telangana, India

Organization: Office of the Joint Director (TB) & State TB Cell, Telangana

Description:

Leveraging technology can be an effective and cost-efficient approach to reach a large and dispersed population. Virtual screening for tuberculosis using technology not only saves the valuable work hours of these individuals but also offers convenience and preserves privacy.

By integrating technology, specifically WhatsApp Chatbot designed in local language, into tuberculosis screening initiatives, public health efforts can effectively bridge the gap in reaching the urban poor within the gig economy. This not only aligns with the tech-savvy nature of the workforce but also maximizes the impact of health interventions in a population facing unique challenges in accessing traditional healthcare services."

Contact Person: Dr A Rajesham

Stall ID: 01-037-6-P

Category of Innovation: Detect>>01. Population Based Screening>>Selfscreening tool



Innovation ID:339

Title of Innovation: TB AAROGYA SATHI MOBILE APPLICATION

Organization: CENTRAL TB DIVISION

Description: "The TB Aarogya Saathi mobile application has been developed by the National TB Elimination Programme as a citizen and patient facing app providing information to citizens on Information on TB disease including self-screening tool, search option for Health Facility, BMI assessment, Nutritional Advice and details to Persons diagnosed with TB on Adherence, Treatment Progress

and Direct Benefit Transfer status under OTP based login basis.

The mobile application is currently available on the Google Play store."

Contact Person: SIVAVALLINATHAN ARUNACHALAM

Stall ID: 01-038-6-D

Category of Innovation: Detect>>01. Population Based Screening>>Selfscreening tool

TREAT



Successful treatment of all people living
with TB for a relapse free cure



01. TB TREATMENT



Innovation ID:46

Title of Innovation: 3D-Printed Compartmental Fixed-Dose Anti-Tuberculosis Drugs to Overcome Drug-Drug Interactions

Organization: National Institute of Pharmaceutical Education and Research, Guwahati

Description: We developed a novel Selective Laser Sintering (SLS) mediated powder bed fusion 3D printing (3DP) approach using SmartEx QD 100 and Eudragit L 100-55 polymers. This enabled the fabrication of compartmentalized FDC bilayer tablets, ensuring the sequential release of INH in the stomach and RIF in the intestine while preventing RIF degradation. The 3D-printed bilayer tablets met pharmacopeial standards for dimensional accuracy (16.02, 8.01, 4.03 mm), weight variation (255.23 mg), friability (less than 1 percent), and hardness (34.61 N). Texture analysis confirmed adequate handling properties, while microCT and SEMEDX verified uniform pore formation and drug distribution. In vitro studies showed rapid INH release (100 percent within 45 min) and controlled RIF release (12 percent in the gastric region over 2 hours, followed by 62 percent in the intestine). In vivo pharmacokinetics in New Zealand white rabbits demonstrated promising results.

Contact Person: Tukaram Ram Karanwad

Stall ID: 03-093-3-P

Category of Innovation: New Drug Formulation>>03. TB Treatment



Innovation ID:80

Title of Innovation: Green Tea Catechin Mediated Amelioration of Anti Tubercular Drug Induced Hepatotoxicity

Organization: Ramakrishna Mission Vivekananda Centenary College

Description: Anti-tubercular drug (ATD) induced hepatotoxicity has remained a serious concern for the clinician due to unwanted complications among the patients. It is well known that ATD mediated hepatotoxicity is caused due to increased oxidative stress while drug metabolism in liver. Green tea catechin named as Epigallocatechin-3-Gallate (EGCG) is a proven strong anti-oxidant. Animals receiving ATDs at clinically equivalent dose were supplemented with EGCG and clinical parameters as well histology remained normal in comparison to drug only group.

Contact Person: Dr. KOUTILYA BHATTACHARJEE

Stall ID: 03-085-1-P

Category of Innovation: ADR Prophylaxis>>03. TB Treatment



Innovation ID:209

Title of Innovation: Enhancement of Pharmaceutical and Therapeutic Efficacy of Anti-Tubercular Dugs by Cocrystallization Techniques

Organization: Chitkara College of Pharmacy, Chitkara University, Punjab, India

Description: Pharmaceutical cocrystals are multicomponent lattices composed of an active pharmaceutical ingredient (API) and a non-covalently bonded coformer in the same crystal lattice. CocrySTALLIZATION techniques have been extensively employed for modifying various properties of APT via solubility, stability, compressibility, hygroscopicity and therapeutic efficacy, etc. Tuberculosis is an infectious disease usually caused by Mycobacterium tuberculosis. As per Global Tuberculosis Report 2024 by WHO, in 2023 approximately 10.1-11.7 million people fall ill with TB and around 1.25 million deaths are caused by TB. Current fixed dose combination of anti-TB drugs have potential disadvantages such as poor solubility, bioavailability, stability and quality issues, that are limiting the effectiveness of drugs in TB therapy. Moreover, major side effects such as liver damage (hepatotoxicity) including nausea, vomiting, loss of appetite, abdominal pain, and skin rashes also leads to patient inconvenience. Cocrystals have the potential to greatly enhance the stability, dissolution or therapeutic efficacy and are also beneficial in reducing the toxicity of anti-tuberculosis drugs. Various research has already been conducted on the formulation and characterization of cocrystals, but the therapeutic efficacy of the drug and its commercial viability are still not precisely explored.

Contact Person: Ritu Rathi

Stall ID: 03-100-3-P

Category of Innovation: New Drug Formulation>>03. TB Treatment



Innovation ID:191

Title of Innovation: Bioceramic Grafts for Controlled Drug Delivery in Potts Spine

Organization: Sree Chitra Tirunal Institute for Medical Science and Technology

Description: The patented bioactive ceramic system for drug delivery is a Class III IV device used for sustained drug delivery and defect space management in hard tissue. The device is fabricated from hydroxyapatite, a calcium phosphate salt present in bone, physically modified to include nano, micro, macro porosities. The device is loaded with an antibiotic agent selected by clinician using completely "off the shelf" components such as hypodermic syringe, three way stop cock. This enables the matrix to provide sustained drug delivery in excess of 4 weeks beyond microbial inhibitory concentration. The system has been validated in-house with vancomycin and gentamycin. The material allows for drug delivery in a calibrated manner and also provides for defect management. The material post delivery integrates with surrounding bony tissue. The product thus provides for drug delivery and void management.

Contact Person: Dr Francis B Fernandez

Stall ID: 03-099-3-S

Category of Innovation: New Drug Formulation>>03. TB Treatment



Innovation ID:159

Title of Innovation: Centinhale-- A Dry Powder Inhalation Containing Isoniazid and Rifabutin for Adjunct Therapy of Pulmonary Tuberculosis

Organization: CSIR-Central Drug Research Institute

Description: Centinhale is a dry powder inhalation (DPI) intended as adjunct inhalation therapy of pulmonary TB with oral DOTS. Preclinical studies in mice and guinea pigs indicate that Centinhale provides relapse-free cure of experimental animal TB in one month. This is achieved by targeted drug delivery to the alveoli, wherein powder particles are phagocytized by macrophages and transported to the tubercular lesion. Phagocytosis also induces 'classical' macrophage activation, invoking innate immune responses inimical to the bacteria. DNA Microarray analysis of genome-wide gene expression by human THP 1 monocyte-derived macrophages indicates rescue from alternative activation observed upon infection with Mycobacterium tuberculosis in vitro.

In seven different mouse and guinea pig models of TB, animals were treated with ca. 80 and 300 μg of the DPI, respectively, for 3 or 4 weeks starting 3, 10, and 30 days post-infection. Adjunct combination therapy eliminated culturable Mtb from the lungs and spleens of all but one of 52 animals that received the DPI. Relapse-free cure was not achieved in one mouse that received DPI plus oral, human equivalent doses of four drugs used in DOTS, starting 30 days post-infection. Oral doses (20mg per kg per day, each) of INH+RFB reduced Mtb burden from ca. 10^6 to 10^3 colony-forming units. Combining half the oral dose with DPI prevented relapse of infection four weeks after stopping the treatment. Saturating doses of the DPI were safe and well-tolerated in rodents, and guinea pigs. Monkeys administered 1, 10, and 100 μg per day doses over 90 days showed no statistically significant changes in parameters mandated for testing per Schedule Y of the Drugs and Cosmetics Act.

Contact Person: Amit Misra

Stall ID: 03-098-3-P

Category of Innovation: New Drug Formulation>>03. TB Treatment



Innovation ID:156

Title of Innovation: Anti-TB drug loaded eugenol based nano-emulsions to improve drug efficiency towards resistant Mycobacterium Tuberculosis

Organization: Vellore Institute of Technology

Description: Isoniazid, Rifampicin, Pyrazinamide, Ethambutol are the most common antibiotics recommended for both TB infection and disease as Directly Observed Therapy Reformulation or repurposing of older drugs is better than discovering newer drugs Drug delivery system like microspheres, nanoemulsions, nanoparticles assisted systems, etc. have been invented

Contact Person: Natarajan Chandrasekaran

Stall ID: 03-097-3-P

Category of Innovation: New Drug Formulation>>03. TB Treatment



Innovation ID:114

Title of Innovation: 3D-Bioprinted Herbal-Drug Implants for Localized Tuberculosis Treatment

Organization: School of Pharmacy, Department of Pharmaceutics, The Neotia University

Description: HDI-TB, is a 3D-bioprinted biodegradable implants for localized treatment of tuberculosis. The implants will contain Rehmanniaglutinosa and Curcuma longa extracts, along with standard anti-TB drugs, tailored to individual Mycobacterium tuberculosis strain profiles.

Contact Person: Nabanita Mal

Stall ID: 03-096-3-P

Category of Innovation: New Drug Formulation>>03. TB Treatment



Innovation ID:269

Title of Innovation: Development of Aerosolized Formulation for latent or as an adjunct therapy for Multi Drug Resistance TB

Organization: Department of Biosciences and Bioengineering, IIT Bombay, Powai, Mumbai

Description: An MDI formulation was prepared by incorporating UA and OA at the dose level of 120 microgram per ml in each actuation. In vitro evaluation of this MDI formulation was performed to ensure its suitability to deliver UA and OA precisely. With prior approval of IAEC, a pharmacokinetic and acute inhalation toxicity study was conducted using MDI on Wistar rats. The Study, In vivo toxicity study demonstrated no adverse effects on body weight and vital organs in the treatment group compared with the control group. Histopathology examination of these essential organs showed no abnormalities. Mild alteration in the biochemical and hematological parameters was observed. However, these alterations did not affect the overall health of the animals. Further Studies – Ursolic acid and Oleanolic acid are isomers hydrophobic triterpenoids that have anti mycobacterial and immune regulatory activities, but they are difficult to dissolve and administer. To overcome this problem, nanotechnology is an interesting possibility.

Thus, the present research focused on preparation of solid lipid microparticles or SLM as vehicles of UA and OA SLM 80 microgram per ml and OA with UA 40 microgram per ml and tested in vitro determining their minimal inhibitory concentration or MIC against drug sensitive and drug resistant Mycobacterium tuberculosis. To test in vivo anti mycobacterial activity, SLM with both terpenoids was administered directly in the lungs using a metered dose inhaler in BALB c mice suffering late progressive pulmonary tuberculosis induced by multidrug resistant strain. The acute toxicity of both triterpenoids with and without SLM microparticles in vivo was also determined. In MDR infected mice suffering late progressive TB, the administration of SLM bearing OA and UA by aerosols using a metered inhaler produced decrease of pulmonary bacterial loads and significantly longer survival than control mice. Further, investigations are required to use these drugs for latent TB infection or as an adjunct therapy to reduce dosage regimen for DS or DR TB.

Contact Person: Dr. Vinay Saini

Stall ID: 03-102-3-D

Category of Innovation: New Drug Formulation>>03. TB Treatment



Innovation ID:55

Title of Innovation: Chitosan Nanoparticles Based Dry Powder Inhalation for Tuberculosis

Organization: Al Shifa College of Pharmacy

Description: Chitosan or tripolyphosphate (TPP) nanoparticles were prepared using the ionic gelation technique. The optimized nanoparticles were further formulated into a dry powder inhalation and the flow properties of the powder, including the angle of repose, Carr's index, and Hausner's ratio were determined. In vitro drug release studies revealed the formulation had the highest release rate, ranging from 66.45-86.16 percent. Formulation 4 was determined to have the ideal particle size and zeta potential, making it appropriate for pulmonary administration. With an angle of repose of 6.6, Carr's index of 1.07, and Hausner's ratio of 1.07, the dry powder inhalation formulation demonstrated exceptional flow characteristics. Formulation 4 demonstrated superior characteristics, including high percentage yield, entrapment efficiency, and drug release profile. The optimized nanoparticles were effectively formulated into a dry powder inhaler with excellent flow properties, making them suitable for pulmonary delivery. These suggest that chitosan based nanoparticles are a promising approach for enhancing the efficacy of isoniazid in tuberculosis treatment, offering a potential improvement over conventional drug delivery methods.

Contact Person: Shamma

Stall ID: 03-094-3-P

Category of Innovation: New Drug Formulation>>03. TB Treatment



Innovation ID:334

Title of Innovation: Trans-Nasal Anti-TB Drug Delivery via Methyl- β -Cyclodextrin Microparticles for Improved Mycobacterial Clearance in CNS

Organization: ICMR-National JALMA Institute for Leprosy & Other Mycobacterial Diseases, Agra

Description: We investigate methyl-beta-cyclodextrin (M-beta-CD) microparticles as a novel trans-nasal drug delivery platform for CNS-TB therapy. M-beta-CD enhances mucosal permeability and drug absorption by forming inclusion complexes with ATDs. We developed ATD-loaded M-beta-CD microparticles via spray drying technology and evaluated their physicochemical properties, in-vitro transport, and in-vivo therapeutic efficacy. The results demonstrated significantly improved CNS drug bioavailability, reduced neuroinflammation, and enhanced bacterial clearance in a murine CNS-TB model. Novelty and Advantages: The ATD-MP formulation enables efficient drug delivery to the brain while reducing systemic side effects. The optimized 5-6 micron microparticles ensure efficient nasal deposition (more than 80 percent emitted dose), biphasic drug release, and sustained therapeutic action.

Pharmacokinetic analysis showed 2.35 $\pm$ 3.03 times higher Cmax and 2.02 $\pm$ 2.61 times higher AUC in the brain compared to oral administration. In-vivo studies confirmed superior bacterial clearance and reduced inflammation, positioning this approach as a viable alternative to conventional therapies. Potential Impact: This formulation holds promise for CNS-TB treatment. Its scalable spray-drying process supports clinical translation, offering improved patient compliance, shorter treatment durations, and enhanced therapeutic outcomes in TB management and neuropharmacology.

Contact Person: Dr. Amit Kumar Singh

Stall ID: 03-103-3-P

Category of Innovation: New Drug Formulation>>03. TB Treatment



Innovation ID:288

Title of Innovation: Machine Learning-Driven Discovery and Experimental Validation of Anti-Tubercular Peptides

Organization: Mahindra University, Hyderabad

Description: To effectively eliminate tuberculosis (TB) in India, novel therapeutics are required. India has a large and continuously increasing number of patients with multidrug-resistant TB. Hence, effective alternative therapeutics with novel mechanisms of anti-tubercular action are needed to further potentiate existing antibiotics. A combination of antibiotics with anti-tubercular peptides has been found to prevent drug resistance and enhance bactericidal action. Furthermore, peptides offer several advantages, such as diverse modes of action, low immunogenicity, and selective affinity for negatively charged cell envelopes.

However, the experimental identification of anti-tubercular peptides is laborious, time-consuming, and expensive. We tested various sequence and physicochemical features and identified optimal features for the robust prediction of anti-tubercular peptides. Using our developed machine learning model, we screened potential anti-tubercular peptides. The screened peptides were synthesized and tested for their anti-tubercular potential using the MIC assay performed on *Mycobacterium smegmatis*. Two peptide candidates showed significant inhibition of bacterial growth under experimental conditions at micromolar concentrations, suggesting their potential as therapeutic agents.

Contact Person: Bipin Singh

Stall ID: 03-092-2-P

Category of Innovation: New Drug Discovery Methods>>03. TB Treatment



Innovation ID:126

**Title of Innovation: Targeting RsmD G966 16S rRNA Methyltransferases:
A Dual-Purpose Strategy for Combating Drug-Resistant TB**

Organization: Koneru Lakshmaiah Education Foundation

Description: Computational drug discovery for 16S rRNA methyltransferases (16SrRMTs), specifically RsmD, an important enzyme associated with antimicrobial resistance (AMR). Molecular docking, molecular dynamics simulations, and pharmacophore modeling are examples of in silico techniques that we use to design novel inhibitors that can: Directly inhibit bacterial growth by targeting essential methyltransferase functions. Stop the emergence of resistance by interfering with methylation sites that are essential for antibiotic evasion. In order to provide important mechanistic insights, our lab has successfully solved the crystal structure of RsmD (1.71 Å... resolution) and carried out in-depth atomistic investigations of SAM-methyltransferase interactions. Translation fidelity and antibiotic interactions are significantly altered by methylation at G966 of 16S rRNA, according to preliminary research, which influences TB resistance.

The planned study will increase computational screening in order to find, refine, and validate new lead compounds against 16SrRMTs, especially RsmD. Molecular simulations, structure-activity relationships, and cofactor-receptor interactions will all be examined in order to create targeted inhibitors. Furthermore, knowledge of methylation-site distributions will direct tactics to regain antibiotic sensitivity. This method of drug discovery, which is computationally driven, an innovative and scalable.

Contact Person: Mangal Sugrao Kadam

Stall ID: 03-091-2-P

Category of Innovation: New Drug Discovery Methods>>03. TB Treatment



Innovation ID:120

Title of Innovation: Machine Learning-Driven Identification of Organosulfur and Selenium Compounds as Novel Gyrase-B Inhibitors

Organization: Drug Chemistry Research Centre, Indore, Madhya Pradesh , India

Description: We present a pioneering machine learning-based methodology designed to revolutionize the discovery of gyrase B (GyrB) inhibitors targeting Mycobacterium tuberculosis (Mtb), the bacterium responsible for TB. By leveraging a comprehensive natural product dataset enriched with diverse chemical and structural attributes, we trained highly accurate predictive models capable of identifying potential GyrB inhibitors with remarkable precision. This groundbreaking computational strategy represents a paradigm shift in the fight against TB, offering a scalable and efficient pathway to accelerate the identification of next-generation antimicrobial agents. By harnessing the power of artificial intelligence, we aim to address the urgent need for innovative solutions to combat TB, particularly in resource-limited settings where the disease burden is highest.

Contact Person: Dr. Monu Kumar Shukla, Dr. Harshita Tiwari

Stall ID: 03-090-2-P

Category of Innovation: New Drug Discovery Methods>>03. TB Treatment



Innovation ID:97

Title of Innovation: Targeting Unrevealed Non Canonical DNA in M.tuberculosis - A new approach for adjunct Drug Development

Organization: The Foundation for Medical Research

Description: We investigate the ability of plant-derived bioactive compounds, such as flavonoids and alkaloids, to target these non-canonical DNA structures. Focusing on these structures offers the potential to uncover new and innovative therapeutic targets that have not been fully investigated in the context of TB. Meanwhile, current research reveals that utilizing flavonoids and alkaloids has the potential to limit Mtb growth without affecting the host cell. These low molecular weight compounds have high pharmacological potency, low cytotoxicity and excellent spectroscopic attributes.

Contact Person: Foundation for Medical Research (FMR)

Stall ID: 03-089-2-P

Category of Innovation: New Drug Discovery Methods>>03. TB Treatment



Innovation ID:75

Title of Innovation: TB Nexus Analytics

Organization: Open Source Pharma Foundation

Description: The Tuberculosis Knowledge and Analytics Platform (TB Nexus Analytics) is a cutting-edge tool designed to revolutionize TB research and treatment. At its heart is the Tuberculosis Knowledge Base and Knowledge Graph (TB KBKG). This innovative “Google Maps for TB” harnesses AI and NLP to compile and organize data from global scientific literature and databases like Drug Bank, ChEMBL, PubChem, STRING, STITCH, KEGG, and more. It provides researchers with an intuitive visual interface to quickly cross-reference information on genes, pathways, and drug targets.

It offers researchers a visual interface to quickly cross-reference information regarding genes, pathways, and drug targets, accelerating TB drug discovery by integrating diverse and up-to-date data sources to uncover new insights. The TB Nexus Analytics is an innovative tool that has the power to bring together data analytics and scientific knowledge to enhance TB research and treatment. By integrating LLM and fostering collaboration among global researchers, it aims to significantly improve TB diagnosis, identify vital biomarkers, and advance targeted treatment strategies, playing a pivotal role in the fight against TB.

Contact Person: Dr. Nibedita Rath

Stall ID: 03-088-2-D

Category of Innovation: New Drug Discovery Methods>>03. TB Treatment



Innovation ID:60

Title of Innovation: Slow-Onset Inhibitors: A Breakthrough in InhA-Targeted Drug Discovery for Tuberculosis Treatment

Organization: Manipal Academy of higher Education

Description: Here, we focus on developing drugs that induce a conformational change in the InhA enzyme by utilizing slow-onset inhibitors through Artificial Intelligence-driven approaches

Contact Person: P. Sai Nikhil

Stall ID: 03-087-2-P

Category of Innovation: New Drug Discovery Methods>>03. TB Treatment



Innovation ID:81

Title of Innovation: Prophylactic therapy for Anti-TB drug induced Hepatotoxicity

Organization: AIIMS Kalyani

Description: N - Acetyl cysteine , a popular anti oxidant , is being tested for its efficacy for reducing the incidence of Drug induced Liver Injury (DILI) among TB patients who are started on first line ATT drugs. Dose is 500 mg twice daily during the intensive phase of TB treatment during which the incidence of DILI is the maximum. Other anti oxidants or combination of anti oxidants could be tested in high risk population for DILI who is going for TB treatment, so as to identify its actual usefulness in a real world scenario.

Contact Person: Dr Deepasree Sukumaran

Stall ID: 03-086-1-P

Category of Innovation: ADR Prophylaxis>>03. TB Treatment



Innovation ID:72

Title of Innovation: Inhalable Carbon Nanotube (CNT)-Based TB therapeutics for Cavitory HIV-TB: A Next-Gen Solution for TB Eradication and Diagnosis

Organization: College of Pharmacy, JSS University Noida, India

Description: We introduce an Inhalable CNT-Based multidrug formulation for cavitory HIV-TB. *Localized pulmonary drug delivery, avoid the potential drug-drug interaction enhance the effectiveness of ARVs, and prevent TB relapse due to targeting bacterial persistence in alveolar macrophages. *Improves immune activation, and reduces resistance and systemic toxicity, hepatotoxicity, and organ toxicities of the oral anti-TB drugs. *CNTs penetrate deeply into the lungs with a high loading capacity for drugs and their slow release minimizes the dosing frequency and improves compliance. *Theranostic Potential Beyond treatment, CNTs allow for early-stage TB detection and real-time optical imaging, which improves diagnosis and monitoring. *Implementation and Scale-Up Strategy Effective deployment will be ensured by optimizing CNT-based inhalable formulations, conducting preclinical and clinical trials, and collaborating with ICMR, biotech firms, and TB research institutes. CNT-based inhalable therapy supports India's 2025 goal of TB eradication, through better drug delivery, reduced resistance, and improved adherence.

Contact Person: Dr. Anindita De and Dr. Praveen TK

Stall ID: 03-095-3-P

Category of Innovation: New Drug Formulation>>03. TB Treatment



Innovation ID:8

Title of Innovation: Sertraline as adjunct to ATT- a Novel axis of host directed therapy for accelerated TB control

Organization: CSIR-IGIB

Description: Protracted TB treatment regimens with a combination of drugs presents as a major hurdle to global TB control programs. Conventional methods of identifying molecules that target the pathogen have inherent problem of inducing resistance in the population. Host directed approaches efficiently circumvent this problem and have shown promise in recent studies.

We have developed a novel strategy to restrict Mycobacterium tuberculosis (Mtb) induced type I IFN response with an FDA approved anti-depressant- Sertraline (SRT). We demonstrate significant synergy between SRT and frontline TB drugs in reducing bacterial burdens in cellular and preclinical models, resulting in early bacterial clearance in murine tissues with significant reduction in the lung granuloma and consolidation .

A higher level of bacterial control was also evident in conditions of poor antibiotic efficacy- against drug tolerant Mtb strains as well. We also observe a marked improvement of the host morbidity associated with TB infection in by the use of SRT as an adjunct to frontline TB drugs. Addition of sertraline to frontline TB drugs significantly enhanced bacterial clearance in the guinea pig model of infection. We also show that sertraline improves the PKPD of TB drugs without altering drug metabolism preventing any toxic accumulation of the TB drugs in the host. Our results highlight the impact of using a safe and time tested anti-depressant as an adjunct to TB therapy and provides evidence for faster control of infection in preclinical models.

Contact Person: Vivek Rao

Stall ID: 03-111-5-P

Category of Innovation: Treatment augmentation>>03. TB Treatment

CSIR-IGIB, Patna, Bihar, India



Innovation ID:178

Title of Innovation: Decoding the mystery of recommending Sea Voyage for the treatment of Tuberculosis

Organization: Swadesh Anusandhan Private Limited

Description: Sea voyage was recommended for the treatment of tuberculosis by Aulus Cornelius Celsus (25 BC–50 AD), a Roman physician and encyclopaedist. Galen (129 – 216 AD), an eminent physician of Roman Empire suggested fresh air, milk and sea voyage for the treatment of tuberculosis (Miller, 1928). “The effect of climate and sea voyage in the treatment of tuberculosis” was presented by Sir Hermann Weber at “International Tuberculosis Congress” in Berlin (Weber, 1899). However, till to date no scientific work is performed on “why sea voyage for tuberculosis”? The topic is still a mystery. The curiosity led me to investigate and decode the topic of “sea voyage for tuberculosis”. I hypothesized that recommending “sea voyage” must be indicating “breathing of fresh sea air”. Sea surface is dominantly occupied by marine aerosols with total emission ranging from 1400 to 6800 million tons per annum (IPCC, 2013). Marine aerosol showed existence of inorganic ions (Yoshizue et al., 2019; Kaushik et al., 2021), over 280 organic compounds (Cochran et al., 2016) and bifunctional carboxylic acids (Bikkina et al., 2015).

The present discovery believes that there is a strong relevance between marine aerosol composition and Tuberculosis treatment. Accordingly, a synergistic nebulization formula was composed containing natural cation, anion and organic acids with specific pH and ionic strength that may act as potent antimycobacterial regimen. During a pilot in-vitro study, total of 96 samples (control: 21 and Treatment: 75) from 21 subjects were analyzed adopting BACTEC MGIT 960 method to assess growth units (GU). Out of 75 treatment, 40 samples showed clear inhibition with 53.33 percent success rate. While subject wise assessment revealed that out of 21 subjects, 15 showed clear susceptibility to at least any one of the treatment groups with 71.43 percent success rate. Results were encouraging and promotes acceptance of hypothesis and further study.

Contact Person: Dr. Ajaykumar Kanduri

Stall ID: 03-119-5-P

Category of Innovation: Treatment augmentation>>03. TB Treatment



Innovation ID:174

Title of Innovation: Identification of two novel drug targets in Tuberculosis: Potential for host-directed immunotherapy

Organization: Centre for DNA fingerprinting and diagnostics

Description: Mycobacterium tuberculosis, Mtb, the causative agent of tuberculosis is one of the major global health concerns. According to 2022 WHO report, about one fourth World's population are latently infected with Mtb and 5 to 10 percent of latently infected individuals develop active tuberculosis particularly in immunocompromised individuals and those coinfecting with HIV. The currently used first line anti tuberculosis drugs are toxic and need to be used for longer period. Shortening treatment duration from six to two months or less could result in significant increase of adherence to treatment and cost reduction. In this context, host-directed adjunct therapies have potential to decrease duration of treatment, as they are less prone to drug resistance, target the immune responses, and act via novel mechanism of action. In the present study, we report 2 FDA approved drugs that masks the interaction between Mtb PPE18 protein and TLR2 11 to 15 LRR domain and Mtb ESAT6 protein and B2M, both showed promising effects in killing Mtb. ESAT6 is involved in inhibition of class I MHC antigen presentation and CD8 T cell and other innate immune functions.

We observed SM09 drug rescued immunosuppressive effects of ESAT6 increasing the host's immune functions that caused killing of Mtb. Again, PPE18 protein binds to TLR2 11 to 15 LRR domain and inhibits MHC class II antigen presentation and CD4 T cell and B cell activation and skewed the T cell response towards the Th2 type that favors Mtb growth. We identified the drug SM107 to mask TLR2 11 to 15 LRR domain, preventing interaction of PPE18 with this domain causing better MHC class II antigen presentation, CD4 T cell response and induction of protective Th1 type but decreased Th2 type response. These overall caused better killing of Mtb. Thus, these 2 drugs reported by us improved host immunity and are promising to be used in adjunct therapy along with anti-tuberculosis drugs for reducing the dose and duration of antituberculosis drugs.

Contact Person: Dr. Sangita Mukhopadhyay

Stall ID: 03-118-5-P

Category of Innovation: Treatment augmentation>>03. TB Treatment



Innovation ID:150

Title of Innovation: Validated Yogic OPD Tool to improving lung function and mitigate stress levels in early Age TB patients

Organization: CENTRAL COUNCIL FOR RESEARCH IN YOGA AND NATUROPATHY

Description: The Validated Yogic OPD Tool is a specialized intervention designed to improve lung function and reduce stress levels in early-age tuberculosis (TB) patients through scientifically validated yogic techniques. This tool integrates pranayama (breathing exercises), guided meditation, and therapeutic yoga postures to enhance respiratory capacity, pulmonary health, and mental well-being. Developed in collaboration with medical experts and yoga therapists, the tool is optimized for outpatient department (OPD) settings, ensuring accessibility and ease of use for patients undergoing TB treatment. Studies suggest that yogic interventions can complement pharmacological treatments by improving oxygenation, reducing inflammation, and boosting overall immune response, thereby accelerating recovery. Additionally, the tool addresses the psychological burden of TB by incorporating stress management techniques, which help in reducing cortisol levels and improving patient adherence to treatment regimens. This approach is particularly beneficial for pediatric and adolescent TB patients, who often experience anxiety and emotional distress due to the prolonged nature of TB treatment. By leveraging yoga-based respiratory therapy, the Validated Yogic OPD Tool offers a holistic, non-invasive, and cost-effective adjunct to conventional TB management, ultimately aiming to improve patient outcomes and quality of life.

Contact Person: Dr Bhavit Bansal

Stall ID: 03-117-5-P

Category of Innovation: Treatment augmentation>>03. TB Treatment



Innovation ID:127

Title of Innovation: Inhibition of Mycobacterium smegmatis Biofilm formation by recombinantly produced proteins

Organization: South Asian University, New Delhi

Description: We have recombinantly produced two human lactonase enzymes Paraoxonase (PON2) and Senescence Marker Protein (SMP30). These proteins have shown antibiofilm properties against Mycobacterium smegmatis. Further, we created mutant proteins to enhance their antibiofilm activity, and we observed that the mutant with enhanced lactonase activity also showed significantly higher antibiofilm properties. These proteins did not show any cytotoxicity, therefore, they are good candidates for combination therapy for the treatment of TB as Mtb shows drug resistance mostly due to the biofilm formation.

Contact Person: Dr. Rinkoo Devi Gupta

Stall ID: 03-116-5-P

Category of Innovation: Treatment augmentation>>03. TB Treatment



Innovation ID:112

Title of Innovation: A Genetically Engineered Probiotic for Enhanced Tuberculosis Therapy

Organization: The Neotia university

Description: ProbioH-TB, a novel genetically engineered *Lactobacillus rhamnosus* GG strain expressing genes for the biosynthesis of key bioactive compounds from *Glycyrrhiza glabra* and *Withaniasomnifera*. In vitro and In-vivo studies will be conducted to evaluate the immunomodulatory effects, anti-mycobacterial activity, and therapeutic efficacy in a mouse model of tuberculosis. The results are expected to demonstrate enhanced immune responses, reduced bacterial load, and improved treatment outcomes, supporting ProbioH-TB as a promising adjunctive therapy for tuberculosis.

Contact Person: Sumit Ghosal

Stall ID: 03-115-5-P

Category of Innovation: Treatment augmentation>>03. TB Treatment



Innovation ID:107

Title of Innovation: Targeted, Synergistic, Nano-Encapsulated Herbal Therapy for Tuberculosis

Organization: School of Pharmacy, Department of Pharmaceutics, The Neotia University

Description: TSE-TB is a novel therapeutic approach for tuberculosis that mixes the knowledge of traditional medicine with new technology and AI innovation. This innovative product uses the synergistic power of selected herbs from Traditional Chinese Medicine (TCM) – Radix Ophiopogonis, Astragalus membranaceus, and Fritillaria cirrhosa – and Ayurveda formulation – Tinospora cordifolia (Guduchi), Ocimum sanctum (Tulsi) & artemisinin. These potent, bioactive compounds are encapsulated within biocompatible and biodegradable nanoparticles. These nano-encapsulation enhances the bioavailability of the herbal extracts, allowing for targeted delivery to infected lung tissues, specifically alveolar macrophages where Mycobacterium tuberculosis resides.

The nanoparticle surface is further engineered with polyethylene glycol for increased circulation time and specific targeting ligands for enhanced macrophage uptake. TSE-TB offers a multi-pronged attack against TB, combining immunomodulatory, anti-inflammatory, and direct anti-mycobacterial actions. It aims to improve treatment outcomes, reduce treatment duration, minimize side effects, and combat drug-resistant strains of TB. This represents a significant advancement towards a more holistic and effective treatment for this global health challenge.

Contact Person: Abhishek Chowdhury

Stall ID: 03-114-5-P

Category of Innovation: Treatment augmentation>>03. TB Treatment

NEOTIA UNIVERSITY



Innovation ID:225

Title of Innovation: Photothermal Activated Therapy for Cutaneous Tuberculosis Using Nanoparticle Loaded Microneedles

Organization: Chitkara College of Pharmacy, Chitkara University, Rajpura

Description: Cutaneous tuberculosis is an aberrant and persistent form of tuberculosis affecting the skin and requires long term treatment with antibiotics. The conventional treatment methods face limitations such as side effects, resistance, as well as poor drug penetration. To overcome these insurmountable impediments, we propose an innovative idea amalgamating the use of photothermal therapy and anti-tubercular drugs through nanoparticles loaded microneedles as a novel therapeutic approach. Typical anti-tubercular drugs result in low concentration at the target site. Nanotechnology based drug delivery systems have caught the eye of the research community to achieve improved therapeutic efficacy.

Microneedles are another innovative trajectory that provide a minimally invasive method of drug delivery. Phototherapy, involving photodynamic therapy (PDT) and photothermal therapy (PTT) aids in killing Mycobacterium tuberculosis with the help of photosensitizers. These agents when irradiated with laser beams lead to the production of reactive oxygen species (ROS) that ultimately kill the pathogens. The integration of photothermal nanoparticles and microneedles offers a dual-function system to enhance drug penetration and help with bacterial clearance. This approach will help to reduce toxicity of anti-tubercular drugs and provide a localised and non-invasive treatment. This innovation opens newer paradigms in the sphere of cutaneous tuberculosis treatment.

Contact Person: SANSHITA

Stall ID: 03-101-3-P

Category of Innovation: New Drug Formulation>>03. TB Treatment



Innovation ID:30

Title of Innovation: Hormonal Supplementation In TB Patients

Organization: American Oncology Institute

Description: Endocrine system helps in maintaining homeostasis in humans and other animals. Hormonal imbalances are noted in tuberculosis but are not given much importance during the management. Hormonal replacements especially thyroxine and DHEA can improve outcomes of TB patients and reduce infectiveness with better quality of life which can increase the adherence to the antibiotic course.

Contact Person: Arivan.R

Stall ID: 03-112-5-P

Category of Innovation: Treatment augmentation>>03. TB Treatment



Innovation ID:186

Title of Innovation: Exploiting synthetic lethality of type II NADH dehydrogenase for complete sterilization of Mycobacterium tuberculosis

**Organization: National Institute of Pharmaceutical Education and Research
Hyderabad**

Description: Mycobacterium tuberculosis, an obligate aerobe, depends on oxidative phosphorylation for its energy requirement under various host conditions, resulting in a heterogeneous population. The non-proton pumping type II NADH dehydrogenase, missing in the human genome, a significant component of the ETC pathway, plays a crucial role in ATP generation by serving as a conduit to electrons and has been identified as a potential drug target for anti-tb drug discovery. Herein, we report for the first time the two quinoline-based scaffolds as selective inhibitors of type II NADH dehydrogenase, shortlisted after screening of 10,000 drug-like small molecules. The shortlisted scaffolds showed a good binding affinity, abrupt depletion in intracellular ATP with significantly reduced NADH turnover, and a prominent bactericidal activity against Mtb.

The SAR analysis and considerable chemistry efforts helped in designing more optimized structural analogs with an improved MIC range of 0.25 to 0.5 microgram per ml against susceptible, non-replicating, and multidrug-resistant Mtb. The killing efficacy of these molecules was significantly improved when tested against non-replicating and intracellularly invaded Mtb. Further, the optimized analogs significantly reduced the functioning of type II NADH which was confirmed using peredox-mCherry reporter strain and fluoro NAD kit. The reduced oxygen consumption rate delineated the impact of type II NADH inhibitors on the respiration of Mtb. The assays involving SNP identification using one-step mutant generation, in-silico binding studies, and inhibition of purified Ndh protein add value to the target identification and validation. Additionally, the compatibility of identified type-II NADH inhibitors with anti-TB drugs makes it suitable for combination therapy resulting in complete sterilization of the bacteria.

Contact Person: Nitin Pal Kalia

Stall ID: 03-120-5-P

Category of Innovation: Treatment augmentation>>03. TB Treatment



Innovation ID:5

Title of Innovation: A Novel Enzyme Based Nano Inhaler Formulations For Combating Drug resistant Mycobacterium tuberculosis

Organization: Individual

Description: The rise of multidrug-resistant (MDR-TB) and extensively drug-resistant (XDR-TB) strains has emphasized the urgent need for new treatments to combat tuberculosis (TB). Traditional antibiotics face challenges in treating TB due to the bacterium's unique, impermeable cell wall, which protects it from both drugs and the immune system. This cell wall, composed of mycolic acids, arabinogalactan, and peptidoglycan, acts as a barrier that makes TB resistant to treatment. Additionally, genetic mutations in TB bacteria alter drug targets, reduce drug uptake, and enhance drug efflux, further complicating treatment.

To address this, a novel enzyme-based nano-inhaler formulation has been developed to break down the TB cell wall, enhancing drug penetration and making the bacteria more vulnerable to immune and drug interventions. The enzyme specifically targets components of the cell wall, such as arabinogalactan-mycolate linkages, disrupting the barrier and increasing permeability. This not only enhances the effectiveness of existing antibiotics but also reduces the required dosage, minimizing side effects and reducing the development of further resistance. The nano-inhaler system ensures targeted delivery directly to the lungs, where TB infections primarily occur, enhancing drug concentration at the site of infection and improving patient outcomes.

Research has shown promising results, with successful synthesis and cloning of the enzyme-encoding gene, and in vitro studies demonstrating significant degradation of the cell wall and increased antibiotic susceptibility. This technology shows potential not only for MDR-TB and XDR-TB but also for other mycobacterial infections, such as leprosy and non-tuberculous mycobacteria (NTM), offering a broader application for respiratory pathogens

Contact Person: Kundharapu Satyamurthy

Stall ID: 03-110-5-P

Category of Innovation: Treatment augmentation>>03. TB Treatment



Innovation ID:2

Title of Innovation: Biofilm based infection and therapy through protein engineering approach (AMR)

Organization: Indian Institute of Technology, Delhi

Description: This technology utilizes a protein engineering-based approach to combat biofilm-associated infections and antimicrobial resistance (AMR). It involves the development of engineered antimicrobial peptides and biofilm-disrupting enzymes that penetrate and degrade biofilms, enhancing antibiotic efficacy. By targeting bacterial adhesins, quorum sensing pathways, and extracellular polymeric substances (EPS), these engineered proteins prevent biofilm formation and promote bacterial clearance. The approach is effective against multidrug-resistant (MDR) infections, offering a biocompatible, highly specific, and customizable alternative to conventional antibiotics, reducing the risk of AMR development.

Contact Person: Shivam Mishra

Stall ID: 03-109-5-P

Category of Innovation: Treatment augmentation>>03. TB Treatment



Innovation ID:345

Title of Innovation: ATLSPA-2021: Upcoming Host Directed Interventions for MDR Tuberculosis

Organization: Amity Centre for Translational Research , Amity University

Description: Immunocompetent host limit the mycobacterial infection in granulomatous lesions which is an indicative of host immunity against infection. Several studies including ours have demonstrated the active involvement of Sphingolipids on host innate response against M. tuberculosis (Sharma et al, 2017). Of particular note our pioneer and compelling study has advocated that Sphingosine -1 phosphate; the key Sphingolipid moiety is capable of controlling M. tb infection (Nadella et al, 2020) and unpublished data. As S1P is potentially allergic in nature therefore this may not qualify the criteria of new anti-tubercular agent. In view of this, our unpublished data have shown antimycobacterial potential of ATLS-PA2021 in variety of model we tested including animal challenge.

More importantly L serine enhanced the sensitivity of both wild type and MDR strain of mycobacteria for Rifampicin and 2nd line Anti tubercular drugs which indicated adjunct potential of ATLS-PA2021 which we have patented in past. On the basis of these results, we plan to develop ATLSPA based adjunct for 1st and 2nd line Anti tubercular drugs for improving their sensitivity and effective killing of MDR TB.. Based on our striking data, we propose that these combinations, apart from clearing infection, would also tweak polarization of macrophages and T cell to their effector phenotype. We believe that such Sphingolipids directed therapeutics would also reprogram foamy macrophages and contribute significantly in managing MDR Tuberculosis burden in host.

Contact Person: H Prakash

Stall ID: 03-108-4-P

Category of Innovation: New Drugs and Therapeutics>>03. TB Treatment



Innovation ID:303

Title of Innovation: TB GUARD - Mycobacteriophage Screening and Evaluation as Salvage therapy

Organization: Fortis Memorial Research Institute, Gurugram

Description: In an ongoing Dry Pipeline era of anti-tubercular therapy and difficult compliance the troubling adverse effect profile of anti tubercular therapy essentially mandate the emerging need of new compounds and the need for alternative strategies to treat emergent MDR, XDR M. tuberculosis strains as a priority. With limited literature it requires screening an expanded panel for new phages that infect M. tuberculosis, extracting potentially useful phages by genome engineering and utilizing whole genome sequencing and host range manipulation, and defining variations in phage infection in a suite of M. tuberculosis clinical isolates to ultimately assemble phage cocktail that efficiently kills sequence specific and linked clinical sample derived M. tuberculosis strains in vitro to evaluate phage therapy for human tuberculosis. To assess and evaluate therapeutic potential of bacteriophage therapy with the identification of a set of phages that efficiently infect and kill a broad range of M. tuberculosis strains with seemingly low resistance frequencies, infrequent crossresistance to potentially utilized as salvage therapy in MDR XDR strains with concomitant anti tubercular therapy.

Contact Person: Dr Neha Rastogi

Stall ID: 03-107-4-P

Category of Innovation: New Drugs and Therapeutics>>03. TB Treatment



Innovation ID:241

Title of Innovation: Development of a Novel Rifampicin-Clofazimine Hybrid for the Treatment of Tuberculosis

Organization: Saveetha Institute of Medical and Technical Sciences Briteblue Pharmaceuticals

Description: A novel rifampicin analog by hybrid of rifampicin and clofazimine precursors to improve anti-TB action of two proven antiTB medications. Mycobacterium tuberculosis RNA polymerase, a crucial therapeutic target has shown a higher binding affinity for the newly chemically modified rifampicin. Potential reduction of resistance It is expected that the altered molecular structure minimizes susceptibility to typical resistance mechanisms. Synergy with existing TB regimens The compound can be integrated into current treatment protocols to enhance outcomes. Shortened TB treatment duration Potential to improve patient adherence and reduce healthcare cost

Contact Person: Dr.P.Saravanan

Stall ID: 03-106-4-P

Category of Innovation: New Drugs and Therapeutics>>03. TB Treatment



Innovation ID:213

Title of Innovation: Next-generation phytochemical-based hybrid drug candidates to combat drug-resistance Mycobacterium tuberculosis strains

Organization: BRIC- Institute of Life Sciences, Bhubaneswar; ICMR-Regional Medical Research Centre, Bhubaneswar

Description: Even after high-end scientific investment and socio-political support, we are still unable to control the emerging drug-resistant strains of Mycobacterium tuberculosis (Mtb) that cause tuberculosis (TB). While more than twenty possible anti-TB drugs are in different stages of clinical testing, only three have been approved for general use in the last 20 years. The lack of potential drugs has resulted in a gradual increase in both prevalence and mortality rates. In the bottleneck of well-tolerated anti-TB drugs, natural products or phytochemicals are considered alternative therapeutic agents due to their multimodal activity and lower toxic profiles, and WHO also appeals to using natural remedies to avoid drug resistance and adverse effects. Researchers have found a lot of possible anti-TB phytochemicals.

However, most of these bioactive phytochemicals don't make it to clinical trials because they don't have good enough drug profiles. To fix this problem and make more potent candidates, scientists are working on improving the structure or chemical conjugation of these active phytochemicals with existing drugs. Most of the anti-TB drugs that have been tested in clinical trials were made through this process, including sutezolid and posizolid from linezolid; DC159a and bedaquiline using fluoroquinolone; and others. After observing the situation, available resources, and technology, we have proposed an ingenious "hybrid drug development concept"™ via the chemical hybridization of phytochemicals with an existing anti-TB drug, isoniazid (INH), through medicinal chemistry synthesis protocols towards the development of potential anti-TB drugs, showing two times higher potency and less toxicity in different experimental models (Indian patent no.: 202011009326). Overall, the use of phytochemicals in the drug development concept could be an innovative approach to the current anti-TB drug discovery module, helping to combat the Mtb and supporting the TB Harega Desh Jeetega campaign, which aims to create a nation free of tuberculosis.

Contact Person: Dr. Shasank Sekhar Swain

Stall ID: 03-105-4-P

Category of Innovation: New Drugs and Therapeutics>>03. TB Treatment



Innovation ID:70

Title of Innovation: Salicylaldehyde and furfuraldehyde derivatives as potent anti-tubercular agents: prospect to dihydropteroate synthase inhibitors

Organization: ICMR-RMRCBB, Bhubaneswar, Odisha, India

Description: The development of newer, effective anti-mycobacterial candidate(s) is coveted by clinics. Hybrid molecules would be comparatively more emulating against invasive bacterial strains; newer antibiotics are continually added. In this innovation, the designing and development of two series of Schiff-based salicylaldehyde S1-S7 and furfuraldehyde F1-F7 molecules individually bearing sulfonamide group are described, and those were synthesized and their structures by spectral characterization were confirmed. Concomitantly, dynamic molecule simulations of all atoms were performed to fathom the mechanism of the action with these leading complexes. These data imply that the synthesized Schiff-based salicylaldehyde hybrids would be promising anti-tubercular compounds.

Contact Person: Dr. Chita Ranjan Sahoo

Stall ID: 03-104-4-P

Category of Innovation: New Drugs and Therapeutics>>03. TB Treatment



Innovation ID:41

Title of Innovation: Integrating Immunomodulatory Strategies and Predatory Bacteria to Combat Mycobacterium tuberculosis Infection

Organization: All India Institute of Medical Sciences

Description: We investigated the potential of Bdellovibrio bacteriovorus, a predatory bacterium, as a therapeutic agent against Mycobacterium tuberculosis. Bdellovibrio bacteriovorus-treated macrophage may enhance the clearance of M. tuberculosis and promotes programmed cell death in infected cells. Direct interaction between the two bacteria within macrophages was assessed by Transmission electron microscopy, indicating the potential predatory behaviour of Bdellovibrio bacteriovorus. These findings suggest that Bdellovibrio bacteriovorus may serve as a safe and innovative approach to combat tuberculosis infections, although further in vivo investigations are necessary to confirm its efficacy and safety.

Contact Person: Archana Singh

Stall ID: 03-113-5-P

Category of Innovation: Treatment augmentation>>03. TB Treatment



02. TB TREATMENT SUPPORT



Innovation ID:108

Title of Innovation: A. gra. sa. t. -- Smart MERM +

Organization: P D U Govt. Medical College, Rajkot

Description: SmartMERM plus is an innovative digital health solution that enhances tuberculosis-TB treatment management by improving upon the traditional Medication Event Reminder Monitor system. This advanced technology specifically targets the challenges of treatment adherence, particularly for patients with Multi-Drug Resistant TB. The system's core features include a sophisticated dual-layer authentication system. The primary layer uses a biometric fingerprint sensor integrated into the medication box, while the secondary layer offers optional facial recognition through a smartphone app and GPS tracking. This ensures that only authorized individuals can access medications while preventing medication sharing or diversion.

A standout feature is the AI-powered intelligent reminder system that adapts to patients' lifestyles. Unlike traditional fixed-time reminders, it learns from patient behavior patterns and adjusts reminder timing accordingly. The system offers customizable multi-modal alerts; audio visual vibration and supports multiple languages.

Contact Person: Anil Singh

Stall ID: 04-121-1-P

Category of Innovation: Adherence Monitoring>>04. TB Treatment Support



Innovation ID:147

Title of Innovation: Chain Of Health: Blockchain For Tb Treatment And Patient Adherence

Organization: Oriental College of Pharmacy, Navi Mumbai, Maharashtra

Description: Chain of Health is a cutting-edge solution that harnesses the power of blockchain technology to improve the management of tuberculosis (TB) treatment and enhance patient adherence. At its core, blockchains secure and tamper-resistant nature allows for transparent tracking of treatment regimens, ensuring that every step of the TB treatment process is visible and accountable.

This transparency boosts medication compliance by providing real-time data on patients progress, helping healthcare providers identify any issues or deviations from prescribed treatments.

By leveraging blockchain, this platform also addresses one of the major challenges in TB treatments drug resistance. As TB patients follow their treatment plans more consistently, the likelihood of developing resistance to TB drugs decreases, which significantly improves health outcomes. With the ability to track each patients treatment in a secure and immutable ledger, healthcare providers can ensure that prescribed therapies are followed exactly, minimizing the risk of resistance that arises from inconsistent or incorrect medication use.

Chain of Health also empowers both healthcare providers and patients by offering greater control over the treatment process. Healthcare professionals can monitor patients progress more effectively, while patients themselves can stay informed and motivated to follow through with their treatment regimen. This results in better adherence, which is critical for a successful recovery.

Contact Person: Gaurav Sushil Singh

Stall ID: 04-122-1-P

Category of Innovation: Adherence Monitoring>>04. TB Treatment Support



Innovation ID:201

Title of Innovation: Integrated Active Awareness, Self-Screening Screening, Adherence and Treatment Toolkit

Organization: ZMQ Development

Description: ZMQ Development (ZMQ) has developed a comprehensive ACTS approach over DOTS where Communities use a Technology linked approach of active ground awareness, self screening, patient, Community let adherence and Treatment management approach. This bottom-up technology linked approach developed by ZMQ is effective and have impactful in low resource settings. It build knowledge and behaviours and provisions tools in the hands of community, families and patient to self-screen and refer; report adherence using Video Observed Therapy and manage treatment and test. It is highly cost effective.

Contact Person: Subhi Quraishi

Stall ID: 04-123-1-P

Category of Innovation: Adherence Monitoring>>04. TB Treatment Support



Innovation ID:207

Title of Innovation: Saliva Colorimetric Diagnostic Tool for Real-Time Monitoring of TB Treatment Adherence and Side Effects

Organization: PLOTNEW BIO INNOVATIONS PRIVATE LIMITED

Description: Current methods for monitoring adherence, such as self-reporting and pill counts, are often unreliable. A reliable, non-invasive, and point-of-care tool to assess adherence is urgently needed to improve treatment outcomes and reduce the global TB burden. A non-invasive, paper strip-based colorimetric diagnostic tool could revolutionize TB treatment by enabling instant detection of drug adherence and side effects using saliva samples. This innovative tool would provide real-time feedback on medication intake and potential toxicity, empowering healthcare providers and patients to ensure adherence, reduce relapse risk, and prevent drug resistance.

With the design and fabricate of a user-friendly, portable paper strip, healthcare professionals can have rapid visual results to detect TB medication adherence and liver toxicity. To develop a reliable and user-friendly paper strip, we will identify and validate specific biomarkers in saliva that correlate with TB medication adherence and liver toxicity. Sensitive and specific colorimetric reactions will be integrated onto the strip to provide rapid visual results. Rigorous clinical trials will evaluate the device's accuracy, reliability, and impact on patient adherence and treatment outcomes. Through rigorous clinical validation, we expect this tool to improve treatment outcomes, reduce the risk of drug resistance, enhance TB control programs, and ultimately reduce healthcare costs

Contact Person: AVINASH C

Stall ID: 04-124-1-S

Category of Innovation: Adherence Monitoring>>04. TB Treatment Support



Innovation ID:211

Title of Innovation: MedpeR® pill box

Description: MedpeR® Smart Pillbox is designed to improve medication adherence, especially for long-term treatments like tuberculosis (TB). It features a centralized monitoring dashboard for tracking multiple devices, ensuring timely interventions.

Organization: Inovocare Healthsoft Solutions Pvt. Ltd.

Key features include:

- **Smart Alerts and Reminders:** On-device audio and LED notifications remind patients to take their medication on time, reducing missed doses.
- **No Daily Refills:** With nine compartments, it stores 2–3 weeks' worth of medication, even in blister packs, eliminating the need for frequent refills.
- **Medication Protection:** Preserves medicines in their original blister packs, preventing contamination.
- **Offline Functionality:** Operates without Wi-Fi or a smartphone, with alarms and data storage.
- **Remote Caregiver Alerts:** Caregivers receive alerts for missed doses, ensuring remote monitoring.
- **Doctor-Recommended and Research-Backed:** Trusted by healthcare professionals and recognized in medical literature.
- **Portable and User-Friendly:** Compact, lightweight, with an emergency meds slot for easy use at home or on the go.
- **Adherence Reports:** Detailed 14-day adherence reports help track medication progress.

MedpeR® supports TB care programs in India by enhancing medication adherence, contributing to the fight against TB.

Contact Person: Rohan Tripathi

Stall ID: 04-125-1-S

Category of Innovation: Adherence Monitoring>>04. TB Treatment Support



Innovation ID:221

Title of Innovation: System for Treatment Adherence and Medication Protocol (STAMP)

Organization: Sundaram Medical Devices

Description: Cutaneous tuberculosis is an aberrant and persistent form of tuberculosis affecting the skin and requires long term treatment with antibiotics. The conventional treatment methods face limitations such as side effects, resistance, as well as poor drug penetration. To overcome these insurmountable impediments, we propose an innovative idea amalgamating the use of photothermal therapy and anti-tubercular drugs through nanoparticles loaded microneedles as a novel therapeutic approach. Typical anti-tubercular drugs result in low concentration at the target site. Nanotechnology based drug delivery systems have caught the eye of the research community to achieve improved therapeutic efficacy.

Microneedles are another innovative trajectory that provide a minimally invasive method of drug delivery. Phototherapy, involving photodynamic therapy (PDT) and photothermal therapy (PTT) aids in killing Mycobacterium tuberculosis with the help of photosensitizers. These agents when irradiated with laser beams lead to the production of reactive oxygen species (ROS) that ultimately kill the pathogens. The integration of photothermal nanoparticles and microneedles offers a dual-function system to enhance drug penetration and help with bacterial clearance. This approach will help to reduce toxicity of anti-tubercular drugs and provide a localised and non-invasive treatment. This innovation opens newer paradigms in the sphere of cutaneous tuberculosis treatment.

Contact Person: Anusha Krishna

Stall ID: 04-126-1-S

Category of Innovation: Adherence Monitoring>>04. TB Treatment Support



Innovation ID:231

Title of Innovation: Prediction of adverse TB outcomes (PATO)

Organization: Wadhwani Institute for Artificial Intelligence

Description: Novel AI solution for the early identification of TB patients at risk of adverse outcomes at treatment initiation

Contact Person: Aparna Chaudhary

Stall ID: 04-127-1-D

Category of Innovation: Adherence Monitoring>>04. TB Treatment Support



Innovation ID:239

Title of Innovation: IVRS based TB Treatment Adherence Monitoring

Organization: Indev Consultancy Pvt Ltd

Description: Indev Consultancy, in collaboration local government bodies, has developed a technology enabled TB Monitoring System to improve patient adherence and reduce TB incidence rates. Indev Consultancy TB Monitoring System is an Interactive Voice Response System that automates daily patient monitoring and facilitates real-time tracking for healthcare administrators. The system operates through automated calls to TB patients, ensuring medication adherence and providing immediate grievance redressal."

Contact Person: Kedar Dash

Stall ID: 04-128-1-S

Category of Innovation: Adherence Monitoring>>04. TB Treatment Support



Innovation ID:323

Title of Innovation: TB IVRS Model

Organization: Jubilant Bhartia Foundation

Description: To contribute towards national goal of TB Free India through technological intervention

Jubilant Bhartia Foundation has developed a TB monitoring software system. The technology is developed in partnership with Indev Consultancy a software company

The system allows

- Effective Monitoring on daily basis
- Daily record of patients who received calls or did not received calls
- Automated daily calls to patients for taking medicine
- Patient details Whose medicine is over
- Location data of patients for proper mapping to deliver nutrition kits
- Regular engagement with such patients for awareness session"

Contact Person: Dr Sujinder Phogat

Stall ID: 04-129-1-D

Category of Innovation: Adherence Monitoring>>04. TB Treatment Support



Innovation ID:71

Title of Innovation: SAVE Screening Assisted Virtually and Early using POCT Integrated approach for Tuberculosis TB & POST TB CRD

Organization: BRIOTA TECHNOLOGIES PVT LTD

Description: Project SAVE uses an integrated 3 stage 1.door to door assessment, 2.screening, 3diagnosis approach for early screening and diagnosis of TB &CRD using Point of Care Spirometry and TB using Digital XRay, TruNatMBT in Community and Primary Care.

Using Make In India, SpiroPRO device with Indian lung scale and AI Based Clinical Decision Support System CDSS makes Spirometry a feasible GOLD standard for tb screening and diagnosis at Community and Primary Care level Spirometry using SpiroPRO is not only easy to conduct but also enables quality spirometry by using real time feedback mechanism both for patients and technician or healthcare staff conducting spirometry tests. Also SpiroPRO is the only spirometry device which comes in 4 models Portable Screening, Portable Diagnostic, Stationary Table Top and Stationary Patient Test Chamber models for synchronization of various spirometry reports at different facility levels for 1 single patient.

SpiroPRO uses ATS approved Indian lung scale, Asian Lung Scale and Local Demographics Based Lung Scale for detailed comparison in doubtful cases. Remote spirometry and Teleconfirmation and TeleConsultation integration options enables end to end service delivery in remote and underserved areas. SAVE Project also emphasizes on follow ups, adherence to medicines and healthy lifestyle including smoking or tobacco cessation enabled through a local language mobile application SiA Systematic Intervention Agent helping patients improve his or her Health Related Quality of Life HRQoL

SpiroPRO uses specially designed by MIT Design Lab USA Ecology Sensitive, Affordable and Biodegradable Spirometry Filters to reduce plastic and medical waste.

Project SAVE uses AI First CDSS Clinical Decision Support System to stratify patients based on multiple parameters such as Comorbidity, BMI, Socio Economic Considerations for identifying high risk candidates for future complications including deaths to provide rigorous and more personalized support to avoid such complications and deaths.

Clinical Decision Support System is based on GOLD and GiNA Guidelines and is easy to be used by Medical Officers at Primary Health level. BRIOTA Flagship POCT device SpiroPRO is a CDSCO certified made in India device having HTA with GoI MOHFW, the Project will ensure the Detection, Treatment, Prevention and building a holistic management system for TB Hatao Detect using SpiroPRO Treat by using TB management, lifestyle management , inhaler training , Prevent by doing door to door screening , working on social stigma , mental health session Built by developing and defining programs in rural sector in rural language

Contact Person: ADITI PAIS

Stall ID: 04-130-2-S

Category of Innovation: AI-Respiratory Sound analyser>>04. TB Treatment Support



Innovation ID:246

Title of Innovation: Haal-Chaal Pravartak: Revolutionizing TB Care with AI-Powered Voice-Based Digital Gym & Immune Optimization Program

Organization: Tech Atriocare Private Limited

Description: Our AI-powered voice-based digital gym, coupled with a proprietary amino acid formulation as immune system optimizer therapy, introduces a non-invasive, accessible, and scalable approach to track respiratory health, improve immune resilience, and support TB management. Inspired by Ayurveda's ""Bhramari Pranayama"", our solution enables individuals to send a simple humming voice-note via WhatsApp. Our AI-powered algorithm then analyzes key respiratory parameters, including:

Airway Patency: Identifies airflow restrictions that may indicate compromised lung function.

Breathing Quality Index: Tracks changes in respiratory health over time, useful for TB patients in recovery.

Cardiac Indicators: Monitors heart optimization range indicators (HORI) which are relevant for TB comorbidities.

Proprietary Amino Acid-Based Formulation:

TB weakens the immune response, leading to prolonged infection and poor recovery outcomes. Our FSSAI-approved amino acid formulation is designed to:

1. Enhance immune resilience by optimizing inflammatory and antiviral, antimycobacterial responses.
2. Support faster recovery in TB patients by modulating host metabolism and cellular defense.
3. Helps in reducing TB-related complications by maintaining balanced immune function.

Impact on TB Management & Care:

1. **Treatment Adherence Support:** Regular voice-based lung function tracking helps monitor TB patients recovery progress and alert caregivers to worsening symptoms.
2. **Comorbidity Management:** TB often impacts lung function and cardiovascular health. Our platform provides early insights into respiratory and cardiac changes.
3. **Immune System Optimization:** The amino acid formulation modulates host immunity against obligate pathogens, potentially reducing drug resistance and reinfection risks.
4. **Potential for Future TB Screening:** Our AI-driven big-data analysis of airway patency trends and triggers may support early TB risk detection in future clinical validation studies.

Contact Person: Tarun Adarsh

Stall ID: 04-131-2-D

Category of Innovation: AI-Respiratory Sound analyser>>04. TB Treatment Support



Innovation ID:146

Title of Innovation: Digital health literacy Intervention for TB patients

Organization: South Asian Institute of Health Promotion

Description: A Mixed-Methods Study, aims to enhance digital health literacy among newly diagnosed TB patients with multimorbidity in India. Co-occurrence of TB with chronic conditions such as diabetes and HIV complicates treatment outcomes and increases the need for patient-centered self-management strategies. However, low health literacy remains a major barrier, impacting treatment adherence and overall health outcomes.

This study seeks to develop, validate, and evaluate a digital health literacy intervention tailored to TB patients, integrating it into India's TB Arogya Sathi platform. The research follows the UK Medical Research Council (MRC) framework, comprising three key phases:

1. Identifying the evidence base through systematic and narrative reviews to examine health literacy interventions in chronic diseases.
2. Developing and validating the intervention using an explanatory sequential mixed-methods approach, including cross-sectional surveys (to assess prevalence and determinants of health literacy) and qualitative studies (to explore barriers and facilitators).
3. Modeling processes and outcomes to assess usability, scalability, and potential integration into national TB programs.

The intervention is being developed as a digital tool, incorporating interactive Photo-novels (photo-based storytelling) to improve patient engagement and comprehension. It will undergo expert reviews, field testing, and iterative refinements to ensure readability, credibility, and cultural relevance.

Contact Person: Arohi Chauhan

Stall ID: 04-132-3-P

Category of Innovation: Awareness package>>04. TB Treatment Support



Innovation ID:52

Title of Innovation: Health Belief Model-based Counselling Tool for Improving Diagnostic and Treatment Outcomes of Pulmonary Tuberculosis Suspects

Organization: All India Institute of Medical Sciences (AIIMS), Patna

Description: Implementation of a Health Belief Model (HBM)-based counselling tool for improving diagnostic and treatment outcomes of pulmonary tuberculosis (PTB) suspects and patients in India. Following baseline patient interviews, literature review and inputs from domain experts, the counselling tool has been developed, comprising of the six HBM constructs, namely, perceived susceptibility, perceived severity, perceived benefits, perceived barriers, cues to action and self-efficacy. The tool will be validated and evaluation findings will be shared with stakeholders. Based on evidence, the tool will be integrated into the existing National TB Elimination Programme (NTEP) framework along with appointment of Directly Observed Treatment Shortcourse (DOTS) counsellors and will be scaled up in a phased manner. PTB suspects and patients attending DOTS centres will be counselled by trained counsellors utilizing this theory-driven, evidence-based, structured counselling tool. This will be accompanied by reminders, follow-up calls and counselling sessions to ensure diagnostic and treatment adherence. The expected outcomes are reduction in diagnostic delay and loss to follow-up rates among PTB suspects and improvement in treatment adherence rate among patients along with enhanced knowledge, motivation and self-efficacy. This integrated counselling approach for patient-centred care and prevention is in line with the first pillar of End TB Strategy of the World Health Organization (WHO) and aims to achieve India's TB elimination goals on a mission mode.

Contact Person: Dr. Shibajee Debbarma

Stall ID: 04-133-4-P

Category of Innovation: Counselling>>04. TB Treatment Support



Innovation ID:53

Title of Innovation: Home-Based Malnutrition Management Tool For Tuberculosis Patients

Organization: Lady Irwin College, University of Delhi

Description: The high burden of Tuberculosis in India necessitates adequate nutritional support, which motivated the development of a home based nutrition tool in the form of a recipe booklet that provides scientifically validated meal plans tailored to the nutritional needs of TB patients, while taking into account local food availability, cultural acceptability, and ease of preparation. WHO and ICMR guidelines were followed to calculate the nutrient requirements. The recipes were categorized into 11 groups selected based on their nutrient density, cost effectiveness, and local availability.

The macronutrient and micronutrient compositions were calculated to ensure dietary adequacy. These affordable, energy-dense meals were designed to align with the MoHFW support of Rs. 1000 per month. A structured six-meal pattern was designed, including three major meals providing 550 kcal and 18g protein and three minor meals offering 300 kcal and 8g protein each. The tool devised as a recipe booklet, ISBN 978 81 963616 00, is available nationally and internationally and empowers the patients and the caregivers by a scalable, adaptable solution, wherein a patient subsample will be counselled to prepare recipes and provide feedback on acceptability and affordability.

Contact Person: Prof. Neena Bhatia, Dr. Neha Bakshi, Dr. Anjani Bakshi

Stall ID: 04-134-5-P

Category of Innovation: Nutrition Support>>04. TB Treatment Support



Innovation ID:262

Title of Innovation: NutriTB Smart Meal Kits: Enhancing Nutrition for TB Patients

Organization: Squad Medicine and Research (SMR)

Description: NutriTB Smart Meal Kits are ready-to-use therapeutic food (RUTF) packs specifically designed to address the nutritional deficiencies of TB patients, including those with drug-resistant TB (DR-TB) and comorbidities such as HIV and diabetes.

Each NutriTB kit contains scientifically formulated, high-protein, calorie-dense meals enriched with essential vitamins, minerals, and probiotics to support immune function, promote weight gain, and improve medication adherence. These meal kits are developed using locally available ingredients, ensuring affordability and cultural acceptability.

Key Features:

- Tailored Nutrition â€œ Designed to meet the specific needs of TB patients, preventing muscle wasting and micronutrient deficiencies.
- Ready-to-Use & Shelf-Stable â€œ Requires no refrigeration or cooking, ensuring easy consumption, particularly in resource-limited settings.
- Cost-Effective & Scalable â€œ Can be distributed through TB programs, clinics, and community health workers, enhancing access for vulnerable populations.
- Integrated with Treatment â€œ Supports medication adherence by mitigating side effects like nausea and loss of appetite, leading to better health outcomes.

Contact Person: Tarun Kumar Suvvari

Stall ID: 04-135-5-P

Category of Innovation: Nutrition Support>>04. TB Treatment Support



Innovation ID:301

Title of Innovation: MAAP

Organization: RevolutionAlze

Description: "MAAP (Malnutrition Assessment & Action Plan) is an AI-powered digital health tool designed for early detection, monitoring, and intervention in malnutrition-related health risks, now being adapted for TB care and management.

Using AI-driven anthropometry, MAAP accurately estimates height and weight from a single image, enabling early identification of weight loss, stunting, and malnutrition, which are key risk factors for TB. By integrating cough symptom tracking and digital nutrition monitoring, MAAP supports frontline health workers in screening for TB symptoms and ensuring adherence to nutritional recovery plans.

The smartphone-based solution is scalable, low-cost, and does not require additional hardware, making it ideal for use by ASHA workers, Anganwadi workers, and healthcare professionals in rural and urban settings. MAAP can geo-tag patient data, allowing for real-time tracking of TB-prone populations and integration with government programs like Nikshay and Poshan Tracker.

Key Features:

- AI-based height & weight tracking for TB risk assessment
- Cough monitoring for early TB symptom detection
- Geo-tagged, tamper-proof digital records for tracking treatment adherence
- Personalized AI-driven nutrition plans for TB recovery
- Seamless integration with national health programs

Contact Person: Romita Ghosh

Stall ID: 04-136-5-D

Category of Innovation: Nutrition Support>>04. TB Treatment Support



Innovation ID:117

Title of Innovation: Swasthya Setu- A Comprehensive Guide for TB Patients Healing Journey

Organization: Tata Institute of Social Sciences, Mumbai

Description: This research culminated in the creation of a comprehensive booklet is a meticulous guide designed not only to address the physical aspects of the disease but also to foster holistic healing for the body, mind, and soul.

Contact Person: Dr. Ritika Shahu

Stall ID: 04-137-6-P

Category of Innovation: Post TB Care>>04. TB Treatment Support



Innovation ID:130

Title of Innovation: Pulmonary rehabilitation Intervention Package (PRIP) for individuals having Post TB Lung Disease

Organization: South Asian Institute of Health Promotion

Description: The Pulmonary Rehabilitation Intervention Package (PRIP) is a novel, facility-based rehabilitation program designed for individuals with Post-TB Lung Disease (PTLD) in India. While Pulmonary Rehabilitation (PR) has been widely used for chronic respiratory conditions like COPD and interstitial lung disease, its integration into TB care remains limited. PRIP fills this gap by providing a structured, evidence-based rehabilitation program tailored for individuals with persistent lung impairment post-TB treatment. The intervention is unique because it adapts PR principles specifically for PTLD, optimizes facility-based care using minimal equipment, integrates pulmonary exercises, airway clearance techniques, and nutritional counseling within existing TB care services, and follows an adaptive hybrid Type II effectiveness-implementation study design, ensuring both clinical effectiveness and real-world feasibility.

PRIP is a 12-week structured rehabilitation program designed for facility-based delivery. The intervention includes aerobic and strength training, airway clearance techniques, nutritional counseling, health education, and self-management strategies.

PRIP will be delivered twice a week for 2-hour sessions over 12 weeks and will be supervised by trained healthcare staff, ensuring feasibility within existing healthcare settings. Participants are required to attend at least 75percent of sessions, and program success is evaluated through the 6-minute walk test (primary outcome), pulmonary function tests, healthcare utilization rates, incidence of recurrent TB, cost-effectiveness, and health-related quality of life improvements.

Contact Person: Arohi Chauhan

Stall ID: 04-138-6-P

Category of Innovation: Post TB Care>>04. TB Treatment Support



Innovation ID:24

Title of Innovation: alveoBreath-For Rehabilitation of TB Patients

Organization: Roundworks Technologies Private Limited

Description: Audible Health AI, Inc. has created DxPro. This innovative Artificial Intelligence powered clinical decision support software uses signal data signatures from forced cough vocalizations to screen for active pulmonary tuberculosis in real time. DxPro requires no specialized personnel, reagents, bodily fluids, or tissues, making it scalable and cost effective. It aligns with many of the WHO's REASSURED criteria for new diagnostic devices, offering real time connectivity, ease of use , affordability, rapid results, equipment free operation, and deliverability. A planned clinical trial will assess DxPro's accuracy in screening for active TB using SDS. The trial will also gather user feedback from healthcare providers to evaluate the device's usability in point of care settings. DxPro itself is a CDSS composed of software subroutines that interact with a proprietary SDS database, employing AI to analyze forced cough vocalization signal data signatures for TB screening. It is intended as an AI based tool for screening respiratory illnesses, specifically TB.

Contact Person: Phungreiso Varu

Stall ID: 04-139-7-S

Category of Innovation: Treatment monitoring>>04. TB Treatment Support



Innovation ID:57

Title of Innovation: Machine Learning supported context-specific TB death prediction model in program setting

Organization: ICMR-National Institute of Epidemiology

Description: "Machine Learning Supported Context Specific TB Death Prediction Model in Program Settings

This project aims to develop a machine learning enabled dashboard to provide real time TB mortality risk assessments at the time of diagnosis. The system will notify Senior Treatment Supervisors and NTEP personnel enabling early identification and timely referral of high risk patients. This initiative builds upon Tamil Nadus Kasanoi Erappilla Thittam TN KET which triages severely ill TB patients based on five predefined clinical criteria.

The proposed machine learning based system will automate data retrieval and analysis providing real time risk stratification. The key features include automated data integration real time predictive analytics self learning AI models and a dashboard for STS and NTEP staff displaying risk scores and alerts.

The implementation will follow a six month phased approach

1. Data retrieval setup Month one
2. Model development using historical data Month two to three
3. Real time pipeline and dashboard creation Month four
4. Model validation and pilot testing Month five
5. Full scale deployment across Tamil Nadu Month six

The system will use Python Scikit Learn TensorFlow and FastAPI for machine learning processing OAuth two point zero and JWT authentication for security and Docker and Kubernetes for scalable deployment. Performance monitoring will be enabled using Prometheus Grafana and the ELK stack.

By leveraging AI driven predictive modeling this initiative will improve TB care reduce mortality and ensure early identification of high risk patients. The model will be scalable for nationwide adoption aligning with Indias National Strategic Plan for TB Elimination and the End TB Strategy 2030 goal of reducing TB deaths by ninety percent."

Contact Person: Suseendar Shanmugasundaram

Stall ID: 04-140-7-P

Category of Innovation: Treatment monitoring>>04. TB Treatment Support



Innovation ID:77

Title of Innovation: Cure Dx: A host based blood biomarker for treatment monitoring

Organization: HEALTHSEQ PRECISION MEDICINE, IISc

Description: CureDx can aid in diagnosis of PTB and more importantly EPTB. Second, it can monitor if the patient is responding well to treatment, as early as 2 weeks after starting treatment and thereby identify poor responders early. Third, the test can determine if a patient can be declared curedx at end-of-treatment for Drug Sensitive, Drug resistant PTB and EPTB. It is intended as a low cost rapid test. The biomarker panel based test is an excellent candidate to translate a fundamental discovery in the lab to a clinical application in line with the path of 'bench to bedside'.

CureDx uses standard RT-PCR to measure the expression level of host RNA biomarker panel genes, in 2 multiplexed reactions. It needs 1 to 2.5 ml of blood and the assay reagents can be stored at room temperature, thus eliminating the need for a cold chain. CureDx fills key gaps in diagnosis by being a non-sputum test, by diagnosing EPTB, and fills key gaps in patient monitoring by identifying poor responders at 2 weeks, saving precious time in getting the right treatment for each patient and identifying not cured patients at end-of-treatment, thereby preventing relapse. Further clinical testing, manufacturing and regulatory approval is being progressed in partnership with Molbio Diagnostics. The work was funded by India Health Fund (IHF), BIRAC, Government of Karnataka, IISc incubator and company funds

Contact Person: Nagasuma Chandra

Stall ID: 04-141-7-P

Category of Innovation: Treatment monitoring>>04. TB Treatment Support

INNOVATION CHALLENGE



Innovation ID:234

Title of Innovation: Bedside device for therapeutic drug monitoring in pulmonary tuberculosis ,an aid for precision medicine

Organization: Akshaisarathi Health care solutions Pvt Ltd

Description: Research has shown that the incidence of therapeutic failure, death, recurrence and Multidrug resistance in Tuberculosis range from three to thirty five percent. One of the major reasons is variation in bioavailability of the drugs due to genetics, diabetes, undernutrition and other factors. There is a need for therapeutic drug monitoring (TDM) and administration of a personalized dose. Since the conventional HPLC and LCMS assays are cumbersome, time consuming, inaccessible and not cost effective it is not routinely done. Therefore, we wish to develop a rapid, cost effective, bedside, point of care assay and device for TDM.

Contact Person: Pratibha Nadig

Stall ID: 04-142-7-D

Category of Innovation: Treatment monitoring>>04. TB Treatment Support



Innovation ID:277

Title of Innovation: Innovative TB-Specific Verbal Autopsy Tool: Strengthening Mortality Surveillance in Resource-Limited Settings

Organization: ICMR-National JALMA Institute for Leprosy and Other Mycobacterial Diseases

Description: our project introduced an innovative TB-specific Verbal Autopsy (TB VA) tool that can be implemented within the general health system through peripheral health workers.

The TB-VA tool was developed through expert consultations and pilot testing, followed by rigorous validation against Physician Certified Deaths (PC-CoD), the gold standard for mortality classification. It demonstrated satisfactory performance, with a sensitivity of 85.75 percent, specificity of 84.12 percent, Positive Predictive Value (PPV) of 87.95 percent, and Negative Predictive Value (NPV) of 81.37 percent, with an overall accuracy measured at 85 percent underscoring its reliability in detecting TB and non-TB deaths. Cohen's Kappa coefficient of 0.695 further highlights substantial agreement with physician-certified diagnoses.

Designed for population-wide application, the TB VA tool uses structured questionnaires and narratives to capture cause-specific mortality data. Initial studies indicate peripheral health workers could use the tool effectively with rigorous training, the involvement of dedicated field staff demonstrated significant improvement in data accuracy and completeness.

To ensure scalability, the model leverages India's existing network of Model Rural Health Research Units (MRHRUs), which serve populations of approximately 100,000. By implementing the TB VA tool across MRHRUs, comprehensive mortality surveillance can be achieved, with results extrapolated to provide robust state and national TB mortality estimates.

This innovative TB VA tool represents a transformative advancement in TB control, equipping the National TB Elimination Program with a powerful, cost-effective mechanism to identify and address TB mortality. Its potential to improve data accuracy and strengthen programmatic interventions adds to the arms inventory in the fight against TB.

ICMR has recommended the adoption of this tool under the NTEP.

Contact Person: Dr Avi Kumar Bansal

Stall ID: 04-143-7-P

Category of Innovation: Treatment monitoring>>04. TB Treatment Support

PREVENT



Break the chain of transmission of TB
Prevent breakdown of TB infection to disease



01.TB INFECTION AND CONTROL



Innovation ID:337

Title of Innovation: Enabling technology for bovine TB control by BCG vaccination, point of care LFA kit for herd screening

Organization: AAGCC8708G

Description: This study investigates methyl-beta-cyclodextrin (M-beta-CD) microparticles as a novel trans-nasal drug delivery platform for CNS-TB therapy. M-beta-CD enhances mucosal permeability and drug absorption by forming inclusion complexes with ATDs. We developed ATD-loaded M-beta-CD microparticles via spray drying technology and evaluated their physicochemical properties, in-vitro transport, and in-vivo therapeutic efficacy. The results demonstrated significantly improved CNS drug bioavailability, reduced neuroinflammation, and enhanced bacterial clearance in a murine CNS-TB model.

Novelty and Advantages: The ATD-MP formulation enables efficient drug delivery to the brain while reducing systemic side effects. The optimized 5-6 micron microparticles ensure efficient nasal deposition (more than 80 percent emitted dose), biphasic drug release, and sustained therapeutic action.

Contact Person: Dr.V.Maroudam

Stall ID: 05-144-A-S

Category of Innovation: Bovine Vaccination>>05. TB Infection Prevention and Control

Innovation ID:59

Title of Innovation: Solar-Powered UV Sterilization for TB Prevention in Public Spaces

Organization: ICMR-NIRT

Description: This concept integrates solar energy with ultraviolet germicidal irradiation UVGI for continuous air sterilization in high risk areas.

Solar Energy Collection Solar panels generate energy during the day, storing excess power in batteries for nighttime use.

UVGI Air Disinfection Upper room UVGI lamps or air circulating UV sterilizers inactivate airborne TB bacteria reducing transmission risks.

Smart Monitoring Sensors track air quality and adjust UV intensity for efficiency.

Benefits can be like

Sustainable & Cost Effective which runs on solar power reducing electricity costs all the time air disinfection which works continuously in crowded spaces. There is already proven Technology of UVGI is already used in hospitals and now scalable for public settings. It is scalable and also customizable which is Ideal for metro stations, markets, hospitals, and slum areas.

Challenges and Solutions can be like UV Safety Concerns for which we can use shielded upper room UVGI to prevent direct exposure.

Weather Dependency to which we can Incorporate battery storage for consistent operation.

Public Awareness for this we can conduct campaigns to educate people on UVGI's role in TB prevention.

Contact Person: Dr. S. Rama Sravya

Stall ID: 05-145-B-P

Category of Innovation: Filtration and Disinfection>>05. TB Infection Prevention and Control

Innovation ID:203

Title of Innovation: Illuvia Sense- Surgical Air disinfection System for TB and other microbial control

Organization: Zerobact Solutions Pvt Ltd

Description: The Illuvia Sense by Aerobiotix is an advanced surgical air disinfection system designed to enhance safety in operating rooms ORs. It uses a combination of ultraviolet germicidal irradiation UVGI, HEPA filtration, and carbon/copper filters to eliminate over 99.9% of airborne pathogens, including bacteria, viruses, and spores, significantly reducing contamination without disrupting hospital workflows.

Independent studies confirm its effectiveness. Laboratory tests at Battelle Biomedical Research Center demonstrated its ability to reduce SARS-CoV-2 to undetectable levels in concentrated bioaerosols. Additionally, it complies with the latest Association of periOperative Registered Nurses (AORN) guidelines, which emphasize air quality management to lower surgical site infection (SSI) risks.

A key feature of the Illuvia Sense is real-time air quality monitoring. Its advanced sensors provide intraoperative environmental data, allowing surgical teams to maintain optimal air quality, enhancing patient safety and outcomes.

The system is also instrumental in tuberculosis (TB) control. By utilizing UVGI technology, it effectively inactivates *Mycobacterium tuberculosis*, reducing the airborne concentration of TB bacteria. This is crucial in healthcare settings where TB transmission is a significant risk.

Aerobiotix has partnered with the International Respiratory Infections Society (IRIS) to launch the IRIS Healthcare Air Quality Seal of Recognition program. This initiative recognizes facilities that meet high air quality standards, promoting safer medical environments.

In summary, Illuvia Sense is a cutting-edge air disinfection system that integrates advanced filtration, real-time monitoring, and compliance with industry standards. It plays a vital role in reducing infection risks, including TB SSIs and viral diseases, ensuring a safer surgical environment for both patients and healthcare workers."

Contact Person: Rahul

Stall ID: 05-146-B-S

Category of Innovation: Filtration and Disinfection>>05. TB Infection Prevention and Control

Innovation ID:297

Title of Innovation: Autonomous Mobile AI Integrated UV-C Disinfection Robots

Organization: Haystack Robotics Intelligence Pvt Ltd.

Description: Purple is an AI Integrated, Autonomous, mobile robot which utilizes UV-C i.e. Ultra Violet-C rays for disinfection.

It provides efficient, high-quality, consistent and chemical-free disinfection in diverse environments, without the need for human intervention.

Key Features:

1. Autonomous Navigation:

- a. Self-Driving Technology: Advanced sensors and AI enable the robot to navigate complex spaces, autonomously.
- b. Path Optimization: Machine learning adapts and optimizes disinfection routes with focus on high touch surfaces for maximum efficiency.

2. UV-C Disinfection:

- a. UV-C lamps in the robots disrupt DNA or RNA of the pathogen, prevent spread of antimicrobial resistance.
- b. Continuous Operation: Robots run independently, ensuring consistent, prolonged disinfection without human input.

3. Remote Control and Monitoring:

- a. Smartphone and Cloud Integration: Control and monitor robots remotely via apps or cloud platforms; track progress and adjust schedules.
- b. Data Analytics: Real-time insights and disinfection reports enhance operational transparency.

4. Energy Efficiency:

- a. Battery-Powered: Rechargeable batteries allow hours of uninterrupted operation.
- b. Low Operational Costs: Energy-efficient designs, no recurrent material costs.

5. Broad Applications:

- a. Healthcare: Help prevent hospital-acquired infections.
- b. Public Spaces: Airports, schools, and malls - to disinfect high-traffic areas.
- c. Hotels and Offices: Sanitation in shared spaces.

6. Safe and Chemical-Free:

- a. Non-Toxic: Provide chemical-free disinfection solution.
- b. Safe Operation: Motion sensors halt UV-C exposure on detecting a human figure.

**Key Benefits:**

- Time-Saving: Frees up staff for other tasks and reduces labor costs.
- Eco-Friendly: No chemical residues left behind, promoting sustainability.
- Enhanced Safety: Provides a safe environment by eliminating airborne and surface pathogens.
- Data-Driven Insights: Collects valuable data on disinfection performance, ensuring accountability.

Our product represents a major breakthrough - Integration of cutting-edge UV-C technology with robotics and AI, offers a fast, efficient, and eco-friendly solution to environmental infection control., ensuring safe and sanitized spaces for all."

Contact Person: Dr Aarti Gupta

Stall ID: 05-147-B-S

Category of Innovation: Filtration and Disinfection>>05. TB Infection Prevention and Control



Innovation ID:27

Title of Innovation: Edith ICU Isolation bed

Organization: Edith Healthcare

Description: Edith healthcare is a medtech startup. Focused on countering cross-contamination, Hospital-Acquired Infections (HAIs) and the menacing rise of antimicrobial resistance, including superbugs, our revolutionary solution addresses these critical challenges head-on. By targeting cross-contamination through air, touch, vectors, we've developed a transformative answer for communicable diseases and immunosuppressed patients. We have created personalized isolation solutions to establish impeccably sterile environments, catering to diverse stakeholders in ICU care units and hospital settings. Our products are providing 70 percent cost reduction as compare to the existing solutions with added values like portability and mental wellness

Contact Person: Edith Robotics Solutions Pvt Ltd

Stall ID: 05-148-C-D

Category of Innovation: Hospital infection control>>05. TB Infection Prevention and Control

Innovation ID:62

Title of Innovation: Highly Oxygenated Aerosol Controlled (HOAC) Combo Device For COVID-19 and Airborne Diseases

Organization: All India Institute Of Medical Sciences (AIIMS-Raipur) C.G

Description: This invention is a Non-Electrical, Single-Use, Disposable BIO-MEDICAL Device designed to reduce aerosol production and minimize the transmission of harmful pathogens. The device, known as the Highly Oxygenated Aerosol Controlled (HOAC) mask, is equipped with multiple components, making it versatile for different uses. It aims to prevent the spread of bio-aerosols from patients during nebulization or oxygen delivery, particularly for individuals with respiratory diseases like COVID-19, Tuberculosis (TB), and those undergoing immunosuppressant treatments.

Key Features:

- Prevention of Bio-aerosol Spread: The HOAC mask captures exhaled bio-aerosols from the patient's nose and mouth (due to coughing or sneezing) and filters the air with minimal resistance.
- Multiple Functions: The device includes a multiport section that enables switching between different components, making it adaptable for various uses:
- High Oxygenation Aerosol Controlled Nebulization Mask
- Highly Oxygenated Aerosol Controlled Incentive Spirometry
- Aerosol Controlled Non-Rebreather Mask (NRBM)
- Aerosol Controlled Face Mask
- Usual Non-Invasive Ventilation (NIV) Mask
- High Oxygen Delivery: The device ensures the delivery of high concentrations of oxygen while controlling aerosol production, reducing the risk of airborne transmission.

Contact Person: AROKIARAJ U

Stall ID: 05-149-C-S

Category of Innovation: Hospital infection control>>05. TB Infection Prevention and Control

Innovation ID:109

Title of Innovation: 3-D Printed Mask To Prevent Exposure From Aerosols In Healthcare Sector

Organization: KMCT Dental College (Calicut,Kerala)

Description: This paper presents the design and development of a 3D-printed mask aimed at preventing aerosol contamination in healthcare environments, thereby reducing the risk of TB transmission. The mask integrates a multi-layered structure, featuring a durable 3D-printed outer shell, an inner fabric layer for comfort and moisture absorption, and a suction system designed to regulate temperature and prevent fogging. The mask is engineered to be autoclavable, ensuring safe and efficient sterilization in medical sector. The fabric layer enhances fit and comfort while maintaining a high level of filtration, and the suction mechanism ensures optimal airflow to manage humidity and prevent fogging during prolonged use. The mask's design addresses critical issues in healthcare PPE, including aerosol transmission, user comfort airborne pathogens, offering a promising solution for reducing TB transmission risks in high-risk areas.

Contact Person: Anna Joseph

Stall ID: 05-150-C-P

Category of Innovation: Hospital infection control>>05. TB Infection Prevention and Control



Innovation ID:141

Title of Innovation: Facemask which kills TB Bacterium there by preventing Air borne Spread and create a safe Hospital Environment

Organization: Pradaan Innovation Labs LLP

Description: Presenting a Facemask that kills Dangerous microbe like TB Bacterium on contact and can be worn for 8 hours and is highly breathable. Using Patented nano particles which are bio compatible and tested in advanced European labs on actual TB Bacterium Bovis and has proven capability to kill 99.99 percent of TB Bacterium bovis on contact there by preventing air borne spread and having world class infection control capability and prevents the air borne spread from hospitals to the environment.

Contact Person: Krishnadas Ganapathy

Stall ID: 05-151-C-S

Category of Innovation: Hospital infection control>>05. TB Infection Prevention and Control



Innovation ID:177

Title of Innovation: HV1200 (Advanced UV-C Disinfection device)

Organization: Sanismart Technologies LLP

Description: "The HV1200 is a high-performance UV-C disinfection device engineered for rapid, fume-free, and chemical-free pathogen elimination with specific optimization for tuberculosis TB control and healthcare infection prevention.

Powered by 1200 watts of high-intensity UV-C light, the HV1200 achieves a 3-log 99.99 percent inactivation of Mycobacterium tuberculosis and other airborne and surface pathogens in under 10 minutes across 450 square feet. Its 360-degree UV-C dispersion array ensures uniform coverage, eliminating microbial shadows for maximum effectiveness.

Ideal for healthcare facilities, TB isolation wards, pharmaceutical labs, and public health centers, the HV1200 delivers faster disinfection cycles, mobile app integration, and compliance-driven safety features, making it the ultimate solution for high-risk environments.

Contact Person: Dhananjay Talgeri

Stall ID: 05-152-C-D

Category of Innovation: Hospital infection control>>05. TB Infection Prevention and Control



Innovation ID:145

Title of Innovation: TB Hygiene Guard

Organization: Seth G.S. Medical College and KEM Hospital

Description: The proposed TB Hygiene Guard kit offers a low-cost, high-impact solution to reduce TB transmission by addressing key aspects of infection control such as airborne transmission, safe sputum disposal, and personal hygiene. Each kit costs INR 40 to 50 and includes reusable masks, bleaching powder, a spitting tin, soap, and an educational leaflet. The initiative leverages local production, public-private partnerships, and existing government programs to ensure cost efficiency and scalability.

Contact Person: Dr. Anamika Prashant

Stall ID: 05-153-D-S

Category of Innovation: Personal Infection Control>>05. TB Infection Prevention and Control



Innovation ID:216

Title of Innovation: An in vitro 3D Human TB Granuloma model-based platform to predict the risk of immunomodulator-induced latent TB reactivation

Organization: Foundation for Neglected Disease Research

Description: Human TB granulomas, which contain both replicating (REP) and non-replicating (NRP, or latent) Mycobacterium tuberculosis (Mtb), are central to TB infection. Immunomodulatory drugs used for autoimmune diseases and cancer treatments can alter the immune status of these granulomas, potentially triggering TB reactivation—converting NRP Mtb to REP Mtb, leading to active TB. In India, where a significant portion of the population may have latent TB, the use of such drugs, including biosimilars, increases the risk of TB reactivation.

To address this, we have developed an in vitro 3D human TB granuloma model-based assay to predict the risk of immunomodulator-induced TB reactivation. The assay has been validated using drugs like Adalimumab and Etanercept and measures the conversion of NRP to REP Mtb using fluorescence microscopy. Currently in a 24-well format, efforts are underway to expand it to a 96-well format for testing a larger number of drugs. This platform allows early prediction of TB reactivation, helping pharmaceutical companies and biosimilar developers identify safer candidates during drug discovery and development, reducing the risk of unexpected TB reactivation in clinical settings and supporting TB eradication efforts.

Contact Person: Dr. Radha Krishan Shandil

Stall ID: 05-154-E-P

Category of Innovation: Prevention of Reactivation>>05. TB Infection Prevention and Control



Innovation ID:9

Title of Innovation: Lateral Flow Assay for IP-10 based detection of Tuberculosis Infection + Blood collection Tubes for stimulation

Organization: R-Biopharm AG

Description: The RIDA Quick TB is a lateral flow test for the diagnosis of Tuberculosis Infection. After stimulation with TB specific antigens the levels of IP-10 in the blood plasma are measured and analysed in a lateral flow reader. The test has CE approval according to the new in vitro diagnostic regulation in Europe.

Contact Person: Manuel Hitzler

Stall ID: 05-155-F-P

Category of Innovation: TB Infection Testing>>05. TB Infection Prevention and Control



Innovation ID:318

Title of Innovation: Cy-TB Smart Patch

Organization: Mylab Discovery Solutions

Description: Cy-TB Smart Patch with TB Connect Application: Latent TB Testing: Replacing the PPD test, the Cy-TB patch minimizes false positives, offering a patient-friendly, reliable diagnostic tool.

Contact Person: Gautam R. Wankhede

Stall ID: 05-156-F-S

Category of Innovation: TB Infection Testing>>05. TB Infection Prevention and Control



Innovation ID:348

Title of Innovation: Latent TB Diagnostic Solution

Organization: SD BIOSENSOR HEALTHCARE PVT LTD

Description: STANDARD TB Feron is a IGRA-ELISA based kit for widespread testing of Latent TB.

Contact Person: Ayub Nawaz

Stall ID: 05-157-F-P

Category of Innovation: TB Infection Testing>>05. TB Infection Prevention and Control

Innovation ID:22

Title of Innovation: A New Approach to Reducing Tuberculosis Spread Using Calcium and Magnesium Salts

Organization: Vardhaman Mahavir Medical College & Safdarjung Hospital

Description: Tuberculosis (TB) is a serious infectious disease caused by Mycobacterium tuberculosis. It spreads when an infected person coughs, sneezes, or talks, releasing tiny droplets into the air. These droplets, if smaller than 5 microns ($\hat{A}\mu\text{m}$), can stay suspended for long periods, making them easy to inhale and increasing the risk of infection.

Idea is to add calcium (Ca) and magnesium (Mg) salts to TB treatment which could increase the size of these expelled droplets to over 50 μm . Larger droplets fall to the ground faster, reducing the time infectious particles linger in the air and lowering the chances of transmission.

How Calcium and Magnesium Salts May Help?

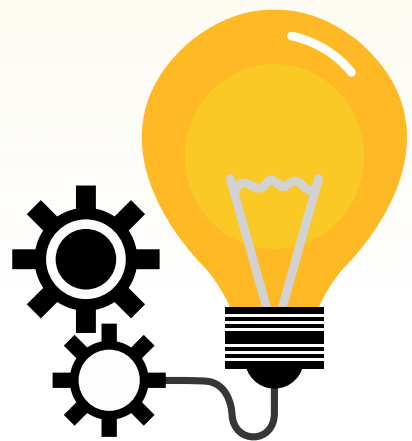
- Calcium and magnesium are essential minerals that play a key role in maintaining bodily fluids, including mucus in the respiratory system. When introduced into TB treatment, they could:
- Increase Droplet Size : Helping smaller infectious droplets merge into larger ones, making them less likely to remain airborne.
- Improve Mucus Consistency : Enhancing mucus hydration and thickness, preventing the formation of tiny aerosolized droplets.
- Modify Respiratory Secretions : Changing how mucus interacts with expelled air, reducing the number of fine, highly infectious droplets.

Contact Person: Syed Md Ashar Waris

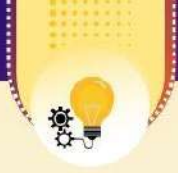
Stall ID: 05-158-G-P

Category of Innovation: Treatment of TB Infection>>05. TB Infection Prevention and Control

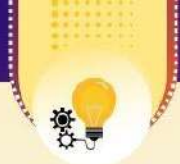
BUILD



**Build and Strengthen the System to
Detect, Treat and Prevent TB**



1. TRAINING AND CAPACITY BUILDING



Innovation ID:286

Title of Innovation: LLM Assistant for Frontline Health Workers in Tuberculosis (TB) Management

Organization: I-HUB FOR ROBOTICS AND AUTONOMOUS SYSTEMS INNOVATION FOUNDATION

Description: This project proposes the development of an AI-powered Large Language Model (LLM)-based conversational assistant to support FLWs in TB diagnosis, treatment, and patient management. The assistant will provide real-time, context-aware responses aligned with national TB guidelines, support multiple regional languages, and offer offline functionality for low-connectivity areas. Key innovations include delivering interactive training modules and providing responses to questions from FLWs based on the TB guidelines.

The project will involve conducting a user study to understand user requirements, preparing TB-specific datasets for LLMs, designing the interface with FLWs, piloting the assistant in high TB prevalence areas, and evaluating its impact on patient outcomes and FLW workload.

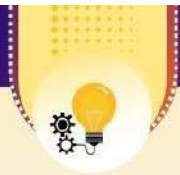
The tool is expected to improve diagnostic accuracy, improve adherence to TB protocols, and reduce administrative burdens. The assistant will also provide continuous learning opportunities for FLWs, strengthening their capacity.

The assistant will be designed for implementability & sustainability, ensuring a collaboration with government programs like the National TB Elimination Program and non-profit health organizations. We also plan to open-source the model and the TB database to enable broader adoption and continuous improvement.

Contact Person: Nihar Desai

Stall ID: 07-176-H-D

Category of Innovation: Ai based capacity building for FLW>>07. Training and Capacity Building



Innovation ID:135

Title of Innovation: Query2COE

Organization: Indian Institute of Public Health Gandhinagar

Description: The Query to COE plugin is a digital solution that streamlines structured communication among District DR-TB Centers, Nodal Centers, and Centers of Excellence (COEs) to facilitate expert consultation, structured referrals, and real-time case tracking for improved drug-resistant tuberculosis (DR-TB) case management. The system follows a hierarchical ticketing process, where queries raised by District DR-TB Centers are routed to Nodal Centers for initial response or further escalation to COEs for expert review. Each query is assigned a unique ticket ID, ensuring precise tracking and real-time status updates. The plugin integrates structured query submission, allowing users to submit standardized forms with detailed treatment concerns, diagnostic issues, and medication-related questions. Automated notifications ensure that unresolved queries escalate within predefined timeframes, prioritizing critical cases. An admin panel with performance analytics allows system-wide tracking of query resolution efficiency, response timelines, and facility-specific workload. This plugin ensures faster treatment decisions, improved collaboration, and increased accountability in DR-TB management. Its scalable architecture supports nationwide implementation within the National TB Elimination Program (NTEP) and provides structured oversight in managing complex TB cases. Future advancements include nationwide adoption, ongoing refinements, and capacity-building for healthcare providers. By enhancing digital connectivity among TB care facilities, the Query to COE plugin strengthens decision-making, ensures timely intervention, and significantly contributes to India's TB elimination goals.

Contact Person: Dr. Sandeep Kumar Rai

Stall ID: 07-177-I-D

Category of Innovation: Clinical Decision Support>>07. Training and Capacity Building



Innovation ID:137

Title of Innovation: ManageTB India Plugin

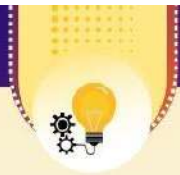
Organization: Indian Institute of Public Health Gandhinagar

Description: Manage TB India is a clinical decision support plugin designed to assist healthcare providers in accurate TB diagnosis, regimen selection, and prescription generation while ensuring adherence to national TB treatment guidelines. The plugin addresses key challenges in TB management, such as misdiagnosis, inconsistent prescription practices, and treatment delays, which contribute to drug-resistant TB (DR-TB). By integrating real-time decision-making algorithms, it helps clinicians select the most appropriate treatment regimen based on patient history, diagnostic results, and clinical guidelines. The system operates through a structured logic framework, where users input relevant patient details, laboratory findings, and drug susceptibility test results, and the plugin provides prescription recommendations aligned with current TB protocols. A built-in validation mechanism ensures that treatment plans comply with standardized guidelines, reducing the risk of inappropriate drug combinations or incorrect dosing. The plugin also enables continuous updates to treatment logic, allowing it to remain aligned with evolving national policies without disrupting functionality. Designed for scalability, it can be integrated with digital health platforms to support data-driven TB management while maintaining a user-friendly interface that enhances accessibility for healthcare providers. Future advancements include AI-driven insights, predictive analytics for TB treatment outcomes, and expanded functionality for real-time epidemiological monitoring, further strengthening TB elimination efforts in India. By ensuring standardized clinical guidance, reducing prescription errors, and improving compliance with national protocols, Manage TB India serves as a critical tool in enhancing TB treatment efficiency and supporting healthcare providers in delivering evidence-based care.

Contact Person: Dr. Sandeep Kumar Rai

Stall ID: 07-178-J-D

Category of Innovation: On Job Training>>07. Training and Capacity Building



Innovation ID:143

Title of Innovation: Knowledge Connect: AI-Powered Knowledge Support System for Tuberculosis Management

Organization: Indian Institute of Public Health Gandhinagar

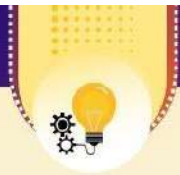
Description: "The Knowledge Connect is an advanced digital knowledge management tool designed to support healthcare professionals by providing structured learning and an intelligent content retrieval system for TB-related information. Access to accurate, up-to-date TB guidelines and training materials is often fragmented, making it difficult for providers to find relevant information when needed. This module addresses that challenge by integrating an AI-powered chatbot, structured learning modules, and real-time content recommendations to streamline knowledge dissemination. Users can engage in step-by-step learning through cadre-specific courses while also utilizing a searchable knowledge base to retrieve content tailored to their needs. The SETU chatbot enhances accessibility by allowing users to query specific TB-related topics in natural language, refining results based on behavioural patterns and user preferences. The system architecture consists of a content retrieval engine, structured learning modules, and an admin-controlled analytics dashboard, ensuring seamless functionality and continuous updates. When using the chatbot interface, users can search for information via text or voice, receive relevant results, and navigate to in-depth materials. The structured learning path enables professionals to track progress across interactive multimedia modules, ensuring continuous professional development.

The module's admin panel allows system managers to monitor user engagement, update guidelines, and refine AI responses for improved accuracy. Expected benefits include faster knowledge retrieval, improved learning outcomes, enhanced decision-making support, and seamless integration with existing training frameworks. Moving forward, the Knowledge Connect module will continue evolving by incorporating real-time epidemiological insights, refining AI search algorithms, and enhancing user adaptability, ensuring it remains a crucial tool for TB knowledge management and healthcare capacity-building efforts."

Contact Person: Dr. Jay Patel

Stall ID: 07-179-J-D

Category of Innovation: On Job Training>>07. Training and Capacity Building



Innovation ID:349

Title of Innovation: PeerLINC Peer-to-Peer Learning for Innovative Cures for TB

Organization: TB Alliance

Description: PeerLINC is a global knowledge hub designed to support countries in rapidly implementing new tuberculosis treatment regimens. A collaboration between TB Alliance, the Tropical Disease Foundation, Inc, and the Department of Health, Philippines, PeerLINC leverages a novel peer-to-peer model to facilitate knowledge exchange, technical support, and training for national TB programs. This approach enables a rapid, cost-effective, interactive, and highly customized support that builds ongoing relationships and mechanisms across TB programs throughout the world. The primary focus of PeerLINC is the programmatic rollout of the WHO-recommended BPaLM regimens for drug-resistant TB. These regimens are shorter, more effective, and less toxic alternative than conventional treatments, leading to significantly improving patient outcomes. Through PeerLINC, early adopter countries draw from their experiences and expertise to take the lead in providing practical guidance to additional countries looking to implement these regimens across diverse healthcare settings.

Contact Person: Eden Mendoza-Hisey

Stall ID: 07-180-J-D

Category of Innovation: On Job Training>>07. Training and Capacity Building



Innovation ID:219

Title of Innovation: Next-Gen Training: Maximizing Efficiency Through MTU Utilization in STDC Agra

Organization: STDC AGRA

Description: We have a touchscreen interactive board equipped with features such as digital whiteboarding, interactive simulations, power backup, and high-definition audio-visual capabilities. It allows for direct pen drive connections and internet access, making it a powerful tool for collaborative learning that is easy to install and use.

The interactive board enables the utilization of the Management Training System (MTS), providing access to a live digital repository of training content on ntep.in . This platform has standardized content and empowered staff to leverage technological advancements. It serves as a guide for trainers and coordinators to ensure uniform training delivery.

Additionally, the system includes real-time feedback and assessment features that allow learners to track their progress instantly. Most of our training sessions in the STDC have been conducted using this MTS with the interactive board.

Impact

1. Improved Training Efficiency: Reduced training time and increased accessibility for healthcare workers.
2. Enhanced Learning Experience: Interactive and engaging training methods improved knowledge retention and adaptability.
3. Standardized Training: Uniform training delivery ensured consistency in TB care across the country.
4. Scalability: The MTS enabled rapid training of healthcare workers, addressing the vast workforce needs.

Contact Person: Dr.Anurag

Stall ID: 07-181-K-P

Category of Innovation: Training>>07. Training and Capacity Building



Innovation ID:342

Title of Innovation: SAKSHAM (Stimulating Advanced Knowledge for Sustainable Health Management)

Organization: National Institute of Health & Family Welfare (NIHFW), New Delhi

Description: "SAKSHAM is a digital learning initiative of Ministry of Health & Family Welfare, Govt. of India. It is developed by National Institute of Health and Family Welfare , New Delhi. It is dedicated and unified platform for providing online trainings to all health professionals in the country for their capacity building. Currently portal is hosting 308 public health courses and 335 clinical courses. These courses modules are used by more than 50,000 health professionals in the country. SAKSHAM is integrated with Training Management Information System through which more than 5 lakhs health professionals data is captured which are trained through physical trainings across the country. For more utility, SAKSHAM mobile application has also been developed and currently available in public domain.

Seeing the importance of this initiative, MoHFW has showcased SAKSHAM in all Health Working Group Meetings under G-20 presidency of India. India has offered SAKSHAM as Digital Public Good for capacity building of health professionals in Indo-Pacific Countries under its QUAD presidency.

Digital Learning Media Lab has also been established at NIHFW for inhouse content development for SAKSHAM portal. Experts can use this media lab for recording of their online training modules.

SAKSHAM is an important digital health initiative which is currently used by medical students, health professionals and general public for awareness, education and capacity building."

Contact Person: Dr. D.K.Yadav

Stall ID: 07-182-K-D

Category of Innovation: Training>>07. Training and Capacity Building



Innovation ID:26

Title of Innovation: Ni-kshay SETU: A Digital Learning Tool to Empower Healthcare Providers for Evidence-Based TB Management

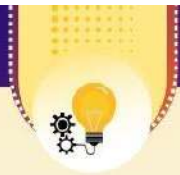
Organization: Indian Institute of Public Health Gadhinagar

Description: Nikshay SETU is a web and mobile application designed as a user centric learning tool that empowers healthcare providers, including frontline workers and clinicians, in managing tuberculosis. It addresses health system challenges related to capacity building by offering easy navigation, real time decision support, and personalized learning modules. The application adheres to digital health principles by understanding the existing ecosystem, sharing and improving resources, designing with people for inclusion, and building for sustainability. By providing targeted and easily accessible information based on national guidelines, Nikshay SETU enhances healthcare providers' ability to diagnose, treat, and monitor tuberculosis cases, thereby improving the quality of services for persons with tuberculosis.

Contact Person: Dr. Harsh Shah

Stall ID: 07-183-L-D

Category of Innovation: Training of FLW>>07. Training and Capacity Building



Innovation ID:26

Title of Innovation: Ni-kshay SETU

Organization: Indian Institute of Public Health Gadhinagar

Description: Ni-kshay SETU is a digital learning platform to empower healthcare providers in effective Tuberculosis (TB) care and management. Aligned with the National Tuberculosis Elimination Program (NTEP) India, the platform offers a user-friendly interface that includes AI-powered chatbots, decision-making support, and cadre-specific modules in multiple Indian languages. It serves as a ready reckoner, providing real-time, system-supported patient-centric care without storing patient data. As of January 2024, Ni-kshay SETU has over 40,400 subscribers and has recorded more than 1,450,000 visits, highlighting its significant impact on capacity building and knowledge enhancement among healthcare workers involved in TB care.

Contact Person: Dr. Harsh Shah

Stall ID: 07-183-L-D

Category of Innovation: Training of FLW>>07. Training and Capacity Building



Innovation ID:305

Title of Innovation: Multiphase FNAC Training via Telepathology for Health Officers to Enhance Extrapulmonary TB Diagnosis at Primary Care

Organization: All India institute of Medical Sciences Deoghar

Description: Our study, Multiphase FNAC Training Aided by Telepathology (MFAT), aims to train health officers at the primary care level, enhancing FNAC proficiency and reducing diagnostic delays. By leveraging telepathology, we can improve accuracy, prevent unnecessary antibiotic use, and facilitate early treatment initiation. MFAT implementation will bridge the diagnostic gap, ensuring effective EPTB management and contributing to TB control efforts in resource-limited settings. In the first six months, the health officer will be trained at AIIMS Deoghar in doing FNAC on maniquine, then assist in real FNAC, followed by FNAC on Patient under vision. After completion of 10 independent FNAC, they will give the certificate of FNAC Trainer, and then they will do at their center. At CHC, after doing FNAC, they will send the images of FNAC slides through telepathography to the AIIMS Deoghar, and the pathologist at AIIMS Deoghar will give a report in 2 days. Details are in proof of concept

Contact Person: Dr Harishkumar Bohra

Stall ID: 07-184-M-P

Category of Innovation: Training on FNAC>>07. Training and Capacity Building

Innovation ID:152

Title of Innovation: Modernized Training System(MTS)

Organization: International Union Against Tuberculosis and Lung Disease (The Union)

Description: "The Modernised Training System, is a systems-based approach to training under the National TB Elimination Programme (NTEP). It integrates modern methods for training material creation, delivery, and monitoring & evaluation while incorporating best practices from traditional techniques.

MTS is built on the following principles:

- a. It involves all stakeholders in the fight against TB in India by pooling training materials created through discrete efforts into a larger, unified system.
- b. MTS is designed to evolve alongside the continuous expansion and evolution of the program.
- c. The system is agile, capable of accommodating evolving training needs.

The system consists of three interoperable components:

1. Content Creation-Ensures the continuous development and maintenance of up-to-date training materials.
2. Training Operations-Manages planning and delivery of training.
3. Training Monitoring & Evaluation- Monitors training, evaluates the efficiency of processes, and standardizes assessment to determine linked competency.

The model maintains the separation of functions to ensure that content development and maintenance can continue independently from training operations, while still delivering the latest material. Built on open-source standards, MTS integrates seamlessly with external Learning Management Systems like WHO's Swasth-eGurukul and NIHF's Saksham. Additionally, it lays the foundation for AI-driven on-demand training, enabling users to query in natural language and receive contextually relevant guidance."

Contact Person: Awele Thurr

Stall ID: 07-185-N-S

Category of Innovation: Training System>>07. Training and Capacity Building

Innovation ID:261

Title of Innovation: Andhra Pradesh ECHO TB Tuesday Clinics

Organization: Extension for Community Healthcare Outcomes (ECHO India)

Description: "Andhra Pradesh ECHO TB Tuesday Clinics, Extension for Community Healthcare Outcomes is a Not for profit organization working on capacity building in healthcare sector by Moving Knowledge, Not People. Andhra Pradesh has been utilizing iECHO digital platform through ECHO hubs established at State TB Cell and State TB Training & Demonstration Centre since November 2022.

To strengthen TB care at peripheries, the state started TB Tuesday Clinics to introduce routine capacity building sessions, tailored to the needs of each healthcare provider. The state designated each Tuesday for a specific cohort to learn through case based discussions on management of TB patients in their routine care cascade.

The First Tuesday of each month, STDC Hub organizes Difficult to Treat TB Clinic DT3C. This clinic has conducted 37 sessions with different case presentations among faculty and clinicians in medical colleges covering 156 unique providers.

The Second Tuesday of each month, STC Hub organizes ECHO TB Clinic with focus on the Clinical Management of TB for District TB Officers and Medical officers. This clinic has conducted 24 sessions covering 193 providers.

The Third Tuesday is dedicated to the Community Management of TB CMT ECHO Clinic for Senior Treatment Supervisors and Tuberculosis Health visitors. The clinic has conducted 27 sessions reaching 341 providers.

The Fourth Tuesday is dedicated for the Diagnostic Management of TB DMT ECHO Clinic for Lab Technicians and Senior Tuberculosis Laboratory Supervisors. STDC Hub has organised 31 DMT sessions so far reaching 370 providers.

Outcome

Andhra Pradesh's TB Tuesday initiative has significantly improved treatment adherence & success rate, as reflected in the 2023 and 2024 TB reports achieving 93.1 and 94.7, respectively. This progress has also contributed to a reduction in death rate, which declined from 2.6 to 1.6."

Contact Person: Shifa Khan

Stall ID: 07-186-O-P

Category of Innovation: Virtual Training>>07. Training and Capacity Building

Innovation ID:328

Title of Innovation: Capacity Building through Virtual Difficult to treat TB ECHO Clinics

Organization: National Institute of TB and respiratory Diseases (NITRD), Delhi

Description: "Virtual technology" Strengthening TB Care The Difficult To Treat TB Clinic DT3C Initiative In response to the growing complexities of Drug Sensitive and Drug Resistant Tuberculosis DSDRTB and Extra Pulmonary TB EPTB. The National Institute of Tuberculosis and Respiratory Diseases NITRD in collaboration with the Central TB Division CTD and National Task Force NTFlaunched the Difficult To Treat TB Clinic DT3C through the ECHO platform. This pioneering initiative aims to enhance the clinical expertise of physicians navigating the intricate challenges of TB treatment Through peer to peer learning expert led didactic sessions and in depth case discussions healthcare professionals gain valuable insights into managing complex TB cases.

These sessions also serve as a platform to highlight grassroots level challenges in the presence of national experts and program managers fostering real time problem solving and knowledge exchange. Till date more than 90 difficult cases have been discussed. This model is successfully being replicated by the CTD in all the states of India Nurses Efforts to Eliminate TB in India eNEETI. Alongside the Difficult To Treat TB Clinic DT3C the National Institute of Tuberculosis and Respiratory Diseases NITRD launched the Nurses Efforts to Eliminate TB in India eNEETI program in August 2023 to strengthen the role of nurses in TB care and management. Designed specifically for nurses working in TB hospitals across India the ECHO supported eNEETI clinic focuses on newer diagnostic approaches treatment protocols and psychosocial support strategies for TB patients and their families twelve such sessions have been conducted by NITRD Paediatric TB ECHO Clinic. Recognizing the need for specialized TB care for children NITRD in collaboration with the Regional Pediatric Centre of Excellence RPCoE for Tuberculosis launched the Paediatric TB ECHO Clinic in May 2024. This initiative focuses on disseminating paediatric TB guidelines and enhancing the capacity of healthcare providers in effectively managing the condition at the peripheral level. The program brings together a diverse group of healthcare professionals including paediatricians, District TB Officers, medical officers of TB Units chest physicians and faculty from AIIMS and both private and government medical colleges By fostering a decentralized approach the clinic ensures widespread dissemination of clinical expertise on paediatric TB.

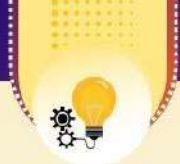
The Pediatric TB ECHO Clinic was launched in May 2024 In the year 2024 8 sessions have been conducted connecting over 2000 participants across India strengthening the collective effort to improve TB outcomes in children"

Contact Person: Neeta singla

Stall ID: 07-187-O-P

Category of Innovation: Virtual Training>>07. Training and Capacity Building

02. INFORMATION SURVEILLANCE & PROGRAMME MANAGEMENT



Innovation ID:245

Title of Innovation: SMART M&E: A Mobile-First, Automated Monitoring & Evaluation Solution

Organization: Independent Consultant

Description: "These automated reports, built in R Studio and generated as HTML files, are designed for seamless sharing and mobile-friendly access perfect for quick circulation via WhatsApp. What makes them unique is their ability to streamline the entire workflow with a single codebase. The code manages data cleaning across multiple files, merges or appends datasets, generates statistical insights, and compiles visual operational summaries all in a lightweight, accessible HTML format. Compared to conventional dashboards, these reports offer several advantages: (a) a higher level of detail, (b) small file size for smooth mobile viewing, (c) inclusion of statistical outputs, and (d) the option to embed the underlying data within the report itself.

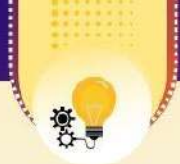
These reports serve multiple operational needs and have been effectively deployed by WJCF for on-ground activities. A key application is provider engagement, summarizing critical metrics such as the number of providers visited, their participation in PPSA programs (including patient notifications), the percentage of diagnosed patients tested with NTEP-recommended CBNAAT, and the proportion receiving fixed-dose combinations (FDCs). Another application focuses on managing treatment coordinators tracking patient visits, follow-ups, and treatment outcomes to ensure effective care delivery.

The reports pull data directly from Nikshay (TB notification registers, follow-up registers, beneficiary registers) and integrate additional datasets from contracted agencies, generating actionable insights and clear visualizations."

Contact Person: Ridhima Sodhi

Stall ID: 08-188-P-D

Category of Innovation: Automated Analytics>>08. Information Surveillance & Programme Management



Innovation ID:251

Title of Innovation: **NTEP Performance Review Dashboard**

Organization: MSH India Health Management Private Limited

Description: NTEP Performance Review Dashboards

The National Tuberculosis Elimination Plan has developed the Ni-kshay dashboard, a web-based system to manage tuberculosis (TB) patients in India. The Ni-kshay dashboard provides essential insights on few NTEP key indicators monitoring and have limitation of accessing comprehensive information on all process and key indicators. Each state has unique data review and presentation needs and requires additional indicators related to the cascade of care, which are dynamic and not readily accessible. The states often limit monitoring to routine indicators, restricting deeper analysis of underlying gaps because extracting information in the desired format requires skilled personnel and time, increasing the risk of errors due to repeated manual interventions.

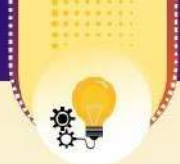
The Performance Review Dashboard developed under the guidance of Central Tuberculosis Division, MoHFW, by Management Sciences for Health and disseminated widely to the states addresses these limitations. Real time data can be accessed for monitoring the state, district and sub-district level performances by automating data compilation, cleaning, and analysis while generating the interactive dashboard. Most data are sourced from Ni-kshay, with some additional datasets maintained offline at State TB Offices.

The Performance Review Dashboard is maintained at the state level and the access can be shared with the districts. It accommodates multiple process and output indicators for effective monitoring of NTEP at both state and district levels, and through automated data processing offers real time, dynamic visualizations highlighting trends and comparisons in a single view. Data-driven decision-making for promoting evidence-based program management, and ensuring high-quality, error-free reports. In efficiently facilitates to identify service delivery gaps, enabling timely course corrections and performance improvements. Additionally, this dashboard can function offline, mitigating challenges related to internet and bandwidth constraints.

Contact Person: Asmita Jyoti Singh

Stall ID: 08-189-P-D

Category of Innovation: Automated Analytics>>>08. Information Surveillance & Programme Management



Innovation ID:264

Title of Innovation: Follow-up monitoring tool for drug-resistant TB treatment

Organization: World Health Organization - TB Technical Support Network

Description: "Despite the many improvements in the programmatic management of drug-resistant tuberculosis over the years, the relative complexity of the follow-up monitoring schedule for DR-TB patients has presented significant challenges for field-level TB staff in ensuring that all the appropriate tests are offered at the appropriate time points. This felt need was recognized by the State and was addressed by the development of an Excel-based tool.

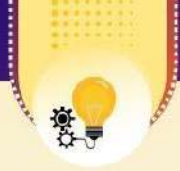
The tool is essentially a spreadsheet which captures basic details of the patients such as name and Ni-kshay ID, with the dates for follow-up microbiological or clinical testing and assessment auto-populated based on the entered date of treatment initiation, treatment extension and continuation. The tool also captures the results of such testing, a section for post-treatment follow-up and outlines the tests which are suggested as and when clinically. At the time of treatment initiation which happens typically in district or nodal DR-TB centers, at least 2 copies of the sheet should be printed – one copy is attached to the PMDT treatment card, and the other is handed over to the patient. An initial piloting of the tool was done in August 2020 to identify challenges in field-level use and recognized lacunae were rectified.

After initial State-level training, district-level training and field-level handholding were continued as and when required. The tool was made available for widespread use from September 2020 onwards. The capacity of the statistical assistants at the nodal DR-TB centers was built to monitor utilization of the tool."

Contact Person: Dr. Jerome G Thampi

Stall ID: 08-190-P-D

Category of Innovation: Automated Analytics>>08. Information Surveillance & Programme Management



Innovation ID:341

Title of Innovation: NI-KSHAY DASHBOARDS PORTAL

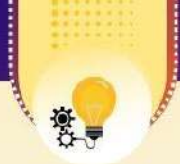
Organization: CENTRAL TB DIVISION

Description: Ni-kshay Dashboards portal was launched in 2020 providing a visual representation of the various NTEP indicators to users across all levels. It enables Administrators and program staff at all levels monitor and review their performance against the select indicators. The various filters enable users to monitor the indicators over time and drill down to the granular level. The Dashboards are accessible via a web browser, and can be viewed using both, desktop, and mobile devices.

Contact Person: SIVAVALLINATHAN ARUNACHALAM

Stall ID: 08-191-P-D

Category of Innovation: Automated Analytics>>>08. Information Surveillance & Programme Management



Innovation ID:253

Title of Innovation: Application of Spatial Epidemiology for Tuberculosis Elimination in India

Organization: Department of Health Services, Government of Kerala

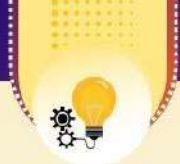
Description: An ongoing operational research project at Sree Chitra Tirunal Institute for Medical Sciences and Technology, Kerala funded by Central TB Division has demonstrated the opportunity of using the existing data in Nikshay for identification of high risk sub district regions. As TB occurrence in the real world occurs irrespective of administrative boundaries, spatial variations in CNRs are pointers for high risk regions with high disease transmission or low case finding efforts. This will enable the NTEP program to identify high CNR subdistrict regions within low CNR districts and low CNR subdistrict regions within high CNR districts respectively.

There are three major advantages for incorporating spatial epidemiology into Nikshay. Firstly, automated assessment of the CNRs from subdistrict regions can be easily incorporated to demonstrate a spatial or temporal difference in CNRs. This will enable district level program managers to focus on subdistrict regions with higher or lower CNRs in comparison to neighboring regions. Secondly, use of the routine notification data already available in Nikshay itself with no additional data collection classifies this venture as a zero cost innovation. Finally, the existing data in Nikshay can easily be fitted to machine learning models like Random Forest, XGBoost etc for enabling real time identification of geographic hotspots and predicting regions at higher risk of tuberculosis occurrence in India

Contact Person: Dr. Mathew J Valampampil

Stall ID: 08-192-Q-D

Category of Innovation: Data analytics>>08. Information Surveillance & Programme Management



Innovation ID:284

Title of Innovation: Ni-kshay Analytics – A Self-Serve Business Intelligence Platform for Data-Driven TB Program Management

Organization: Everwell Health Solutions

Description: Ni-kshay Analytics is a self-serve business intelligence platform that transforms the monitoring and evaluation of India's TB program. Introduced in 2022, it offers role-based access, dynamic dashboards, and a cloud-native architecture, ensuring timely insights for diverse stakeholders. Users can run custom queries, share real-time reports, and automate data-driven decisions, thus minimizing dependencies on centralized technical teams. Since its launch, Ni-kshay Analytics has gained traction in covering thematic areas such as TB preventive treatment, dispensation tracking, ACSM, and other ad-hoc data needs. Notable enhancements include advanced analytics capabilities, predictive modeling, and mobile accessibility features.

Contact Person: Anurag Sharma

Stall ID: 08-193-Q-D

Category of Innovation: Data analytics>>08. Information Surveillance & Programme Management

Innovation ID:292

Title of Innovation: Geospatial AI in predicting Non-adherence and Susceptibility pattern to Treatment of Tuberculosis (AGAINST-TB)

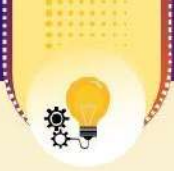
Organization: The INCLEN Trust International

Description: The INCLEN Trust International, India, proposes to develop an information technology based solution called AGAINST TB to create automated analytical models using existing national databases. This solution aims to monitor treatment adherence, assess drug sensitivity and resistance to tuberculosis (TB), and support program implementation.

Our specific objectives are:

1. To establish contextual geo-spatial platform and develop a framework for characterizing and grading Whole of Society factors that are associated with non-adherent behavior and drug susceptibility status in tuberculosis (TB) infection.
2. Using geospatial matrices, to determine the relationship between WoS factors and patients adherence behavior and drug susceptibility status to derive context specific prediction models.
3. Using deep machine learning techniques to prepare country-specific prediction models which can enable national programmes
 - a. To identify individuals who are likely to be less treatment adherent and to classify them based on drug susceptibility patterns
 - b. To identify environmental attributes that may act as proxy variables for determining predisposition to drug-resistant TB and non-adherent behavior at a societal level
 - c. To discriminate and model specific pathways for transmission and treatment-generated drug-resistant TB

We propose a Whole-of-Society approach to use both primary and secondary data set to develop country and context-specific prediction models based on deep machine learning (Geospatial Artificial intelligence). This study is conceptualized under the broad viewpoint that “every non-adherent tuberculosis patients does not develop resistant tuberculosis while all resistant tuberculosis patients do not show non-adherent behaviorTM. There are many global (globalization, migration & travel, international drug resistant TB burden, portfolio of candidate molecules for treating resistant TB), societal (cross-sectoral socio-developmental, cultural, neighborhood and market, access to harmful and hazardous psychoactive substances including alcohol and illicit drugs, built environment) influencers working on households and individuals (economics, nutrition, co-morbidities, behavior and biology) who in-turn are embedded within the national TB policy and program environment; multitude of these factors could independently or in multiple combinations influence an individuals risk of treatment non-adherent behavior as well as infection with drug resistant TB. Pathways for transmission generated and or treatment generated TB may or may not be interconnected.



These can be used for developing machine based algorithms i.e. for path analysis (SEM), visual analytics machine learning approaches (artificial intelligence in identifying correlates) along with statistical analysis of multivariate data to identify and explain associations roles of several covariates that have not been looked at critically so far and have significant public health consequence.

Contact Person: Shikha DIXIT

Stall ID: 08-194-Q-P

Category of Innovation: Data analytics>>08. Information Surveillance & Programme Management

Innovation ID:295

Title of Innovation: eRUPI Feasibility Study: Sustainability options to scale-up screening

Organization: William J. Clinton Foundation

Description: e-RUPI is a cashless, contactless digital payment instrument launched in August 2021 by the Honorable Prime Minister of India. Developed by the National Payment Corporation of India (NPCI) on the UPI platform, it functions as a person-specific and purpose-specific e-voucher for seamless, leak-proof digital transactions. e-RUPI eliminates intermediaries and reduces transaction delays, ensuring minimal logistics and direct payments for welfare programs.

WJCF, in partnership with CTD, MCGM, and STC Bihar, is piloting e-RUPI vouchers to enhance TB diagnosis and notification by facilitating free chest X-rays for presumptive TB patients in the private sector. The pilot, launched in Mumbai and Bihar in October 2024, has issued ~2,000 vouchers across ~20 labs and ~150 private providers, enabling instant payment transfers to X-ray facilities and reducing delays associated with traditional post-paid reimbursement models in the public sector.

Key Benefits:

- Leak-proof and direct payments: Ensures funds reach service providers without leakage.
- Immediate fund transfer: Addresses delays in post-paid vouchers, encouraging lab participation.
- Scalability & efficiency: Integrates with national TB programs to expand private sector engagement.

As a part of this pilot, WJCF is assessing the feasibility, risks, and optimization potential of e-RUPI in scaling TB service delivery.

The study is currently evaluating:

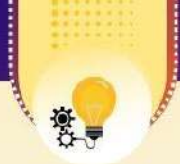
1. Adoption by stakeholders (patients, private providers, x-ray labs, government bodies).
2. Challenges in voucher issuance, reconciliation, and fraud prevention.
3. Gender-specific access concerns and mitigation strategies.
4. Technology gaps and compatibility with TB platforms (Nikshay, e-RUPI Assignor).
5. Scalability across other TB services, including diagnostics and medication access.

Findings will guide policy recommendations for the nationwide implementation of e-RUPI in TB programs, ensuring efficient, equitable, and technology-driven healthcare access.

Contact Person: Daksh Kapoor

Stall ID: 08-195-R-P

Category of Innovation: Digital Benefit Payments>>08. Information Surveillance & Programme Management



Innovation ID:224

Title of Innovation: Knowledge Management Portal for TB ACSM

Organization: The International Union Against Tuberculosis and Lung Disease (The Union)

Description: The Union has developed a digital knowledge management portal that serves as a one-stop repository for strategic TB ACSM resources (tools, documents, guidelines) provided by international institutions, government programs, development agencies, survivor communities, communications experts.

The key objective is to provide stakeholders with rapid access, two-way sharing, capacity building to improve their efficiency and promote cross learnings in the context of TB ACSM. It has been effectively utilised and contributed to by the various state TB program teams, partner agencies, government functionaries and other practitioners collaborating with NTEP.

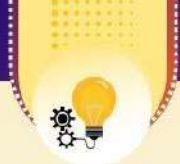
While the portal is seeking for opportunities to scale up, it has reached critical mass as indicated by the fact that it gets the enthusiastic participation and contribution of State TB cells across the country, as well as numerous development partners, public health and communications experts. This robust repository has begun to result not just in knowledge documentation but collaborative knowledge co-creation about TB ACSM that will go a long way in advancing evidence-based interventions.

See: www.tbacmresources.org"

Contact Person: Anisha Singh, Janhavi Mittal, Girdhari Bora

Stall ID: 08-196-S-D

Category of Innovation: Digital Repository>>08. Information Surveillance & Programme Management



Innovation ID:45

Title of Innovation: Digital Platform : HIV-TB Care

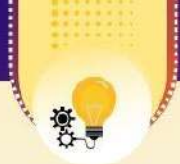
Organization: Self employed

Description: The proposed technology leverages virtual platforms and digital tools to enhance HIV prevention, risk assessment, and case management for high-risk groups, including men who have sex with men, transgender women, and sex workers. It utilizes mobile applications and social media platforms to provide private, confidential, and judgement-free services, addressing barriers such as stigma and accessibility. The intervention includes virtual case management through one-on-one interactions with case managers, appointment reminders, service support information, and educational content. It also involves mapping social media and dating apps to identify online spaces where HRGs are active, analyzing usage patterns, and developing targeted risk assessment strategies. An algorithm-driven risk assessment will be implemented using behavioral data, keyword tracking, and digital engagement metrics to identify and assess individuals at risk. Additionally, the project will facilitate counselling and service linkage, connecting individuals to mental health support, HIV and STI screening, hepatitis services, and other essential healthcare facilities. This 18-month project aims to establish scalable and effective virtual interventions to enhance HIV service delivery and public health outcomes.

Contact Person: Mohammad Shaban

Stall ID: 08-198-U-P

Category of Innovation: Patient Management System>>08. Information Surveillance & Programme Management



Innovation ID:94

Title of Innovation: Cure TB: A digital Health platform for TB diagnosis, treatment monitoring, adherence, patient fragility and contact risk

Organization: HEALTHSEQ PRECISION MEDICINE, IISc

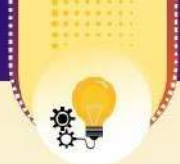
Description: Cure TB is a digital health platform for diagnosis, treatment monitoring, adherence, patient fragility and contact risk monitoring and can be considered as a CDSS tool and can plug into hospital systems and national health digital infrastructure. It uses AI and machine learning extensively for diagnosis (symptoms, clinical observations, hematology tests, CXR, sputum tests, molecular tests (CBNAAT or TrueNAAT) and Bandim scores. Its treatment monitoring and adherence scores also uses patient data for providing response to treatment information. This data is then also integrated for patient fragility scores, which incorporates wellness indicators, co-morbidities, socio-economic profiles and other parameters to evaluate patient fragility risk.

A contract risk profile is also generated using patient's social interactions, household profile, work interactions etc. The platform provides a picture of all information to the clinician for monitoring a patient till end of treatment and beyond. Risk scores and algorithms developed here have been validated with limited clinical data and public data sets as well as synthetic data. It requires further clinical sampling to be taken through for regulatory approval as a device.

Contact Person: Satish Chandra

Stall ID: 08-199-U-S

Category of Innovation: Patient Management System>>08. Information Surveillance & Programme Management



Innovation ID:189

Title of Innovation: Bleepa: The Digital Bridge Creating TB Screening Corridors!

Organization: Feedback Medical India Pvt Ltd

Description: Bleepa is a medical imaging and clinical communication platform that connects X-ray devices (both fixed and portable) to a cloud-based AI server, NAAT labs, hospitals, and TB program offices. It improves coordination, provides real-time notifications of X-ray-positive patients, and offers better oversight in managing large TB screening programs.

The platform functions like a "clinical WhatsApp," enabling seamless communication among healthcare workers. X-ray images are anonymized and uploaded to the Bleepa cloud, where both the X-ray and AI-generated reports are accessible in the patient's virtual clinical room. This allows stakeholders, such as TB offices and health workers, to view and collaborate on patient care remotely. Bleepa also sends daily reports to stakeholders with details about scanned patients, TB-positive cases, and lab referrals.

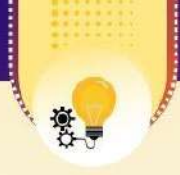
Bleepa enables TB screening corridors across districts and can be easily integrated with private CSR groups' X-ray devices and AI servers. It ensures real-time notifications for TB-positive patients, preventing missed follow-ups for NAAT tests and subsequent care.

Bleepa has already screened 1000+ patients in Gorakhpur, Uttar Pradesh, using portable X-ray devices in mobile health vans for community screenings.

Contact Person: Rohit Singh

Stall ID: 08-200-U-D

Category of Innovation: Patient Management System>>08. Information Surveillance & Programme Management



Innovation ID:198

Title of Innovation: DeepTBCare AI: A Generative AI based agentic mobile app for seamless remote tuberculosis patient management

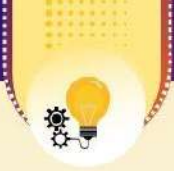
Organization: Coimbatore Institute of Technology

Description: Agentic AI powered is a mobile app that empowers individuals with: a. A TB risk estimator through a simple yet scientifically designed questionnaire. b. A Large Vision Model LVM based chest X Ray analysis to rule out trivial cases of pneumonia. c. A Large Audio Model LAM based cough sound analysis which serves as an additional verification layer. d. An intelligent conversational assistant to answer FAQs about nutrition and medication. e. Automated meal tracking using computer vision based food recognition. f. A search tool to enable localized discovery of treatment centres and medicine banks. g. Timely SMS reminders to ensure timely intake of medication and meals. Therefore, by using this app DeepTBCare AI anyone concerned about their respiratory health can get quick, unambiguous AI driven analysis and estimation regarding their condition and the support they need to manage it effectively. By making automated and seamless TB diagnosis and care more accessible to individuals residing in rural areas, we can improve the associated disease remission rates and spread awareness, ensuring that fewer individuals suffer in the future.

Contact Person: Valliappan Raman

Stall ID: 08-201-U-D

Category of Innovation: Patient Management System>>08. Information Surveillance & Programme Management



Innovation ID:319

Title of Innovation: TBConnect

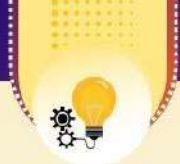
Organization: Mylab Discovery Solutions

Description: TBConnect: This innovative data management system enables real-time patient monitoring, allowing healthcare professionals to adjust treatment for better outcomes. It also reduces stigma, educates patients, and encourages active participation. Data on medication adherence, test results, and treatment progress provides insights to analyze treatment efficacy and TB trends, helping public health authorities optimize interventions.

Contact Person: Gautam R. Wankhede

Stall ID: 08-202-U-D

Category of Innovation: Patient Management System>>08. Information Surveillance & Programme Management



Innovation ID:222

Title of Innovation: NTEP SM&E Feedback System

Organization: The International Union Against Tuberculosis and Lung Disease (The Union)

Description: The SME Portal is an online system developed by the Union to enhance the monitoring and improvement of the National Tuberculosis Elimination Program (NTEP). It allows for structured feedback from state-level NTEP leadership to district teams, with the goal of improving TB control program performance.

Key Features:

Actionable Feedback: Supervisors, primarily from the STDC, provide specific, data-driven feedback to district teams, highlighting areas for improvement and offering clear steps for addressing issues.

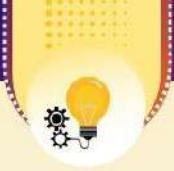
Two User Logins:

- State Login: For STC-STDC staff to provide feedback based on observations.
- District Team Login: For DTOs or DTC staff to access feedback and update actions taken.
- Program Monitoring: The portal helps streamline the NTEP's monitoring efforts, facilitating informed decision-making and improving program performance at the district level.

Contact Person: Shahnawaz Ahmad

Stall ID: 08-203-V-D

Category of Innovation: Programme Feedback>>08. Information Surveillance & Programme Management



Innovation ID:250

Title of Innovation: TB-Watch: An Automated Monitoring System for Targeted Field Actions Towards Tuberculosis Elimination in India

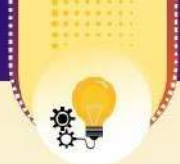
Organization: World Health Organization - NTEP Technical Support Network

Description: Scale-up and integration: TB-Watch has been installed in the state identified systems and scaled up in the state of Uttar Pradesh since August 2024 following which the weekly updates regarding the TB score and the offline field level action lists are provided.

Contact Person: Dr. Shiv Joshi

Stall ID: 08-204-V-D

Category of Innovation: Programme Feedback>>08. Information Surveillance & Programme Management



Innovation ID:197

Title of Innovation: Centralised TB Drugs Sales Monitoring System

Organization: The International Union Against Tuberculosis and Lung Disease (The Union)

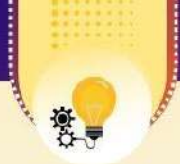
Description: A study conducted in Kerala found that the Schedule H1 Registry has immense potential in improving the surveillance, standards of care and the private public partnerships. The digitalization of various sectors across the country, including healthcare, has significantly enhanced system efficiency. Initiatives such as the Unified Payments Interface (UPI) and the Ayushman Bharat Digital Mission (ABDM) are prime examples of how technology is streamlining operations, improving accessibility, and driving innovation.

This concept model aims to demonstrate a Centralised TB Drugs Sales Monitoring System for improving the surveillance and quality of care through digitalisation of Scheduled H1 drugs sales record maintenance in the Country.

Contact Person: Dr Midhun Rajiv

Stall ID: 08-205-W-P

Category of Innovation: ScheduleH1 Monitoring>>08. Information Surveillance & Programme Management



Innovation ID:151

Title of Innovation: TAI-NDTBC Stigma self-assessment scale for TB

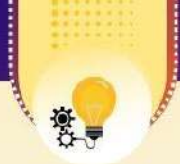
Organization: New Delhi Tuberculosis Centre

Description: The Action Against Stigma; campaign aims to address and eradicate the stigma associated with TB through widespread education, awareness, and community engagement. A questionnaire has been devised, and leading questions would be asked to patients on TB and Stigma. Based on the scale and patients interview it would be concluded whether patient has experienced stigma or not.

Contact Person: Dr. Sanjay Rajpal

Stall ID: 08-206-X-P

Category of Innovation: Stigma Measurement>>08. Information Surveillance & Programme Management



Innovation ID:256

Title of Innovation: Engaging Chemists, AYUSH Providers, and RHPs under NTEP to Reduce Diagnostic Delays in Himachal Pradesh

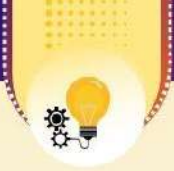
Organization: National Health Mission- Himachal Pradesh

Description: "Himachal Pradesh is a northern state situated in the western Himalayas with difficult terrain and snow-bound hard-to-reach geography. The state of Himachal Pradesh is constantly designing newer innovations to improve access of health services across the state especially in these remote areas. One such successful innovation for the state has been the use of cough syrup surveillance to reduce delays in TB diagnosis. In Himachal Pradesh as per the health seeking behavior recorded, many individuals seek initial care from AYUSH providers, chemists, and rural healthcare practitioners, leading to diagnostic delays and TB spread. This project aimed to integrate these providers into NTEP through cough syrup surveillance to reduce delays in TB diagnosis.."

Contact Person: Dr. Gopal Beri

Stall ID: 08-207-Y-P

Category of Innovation: Surveillance>>08. Information Surveillance & Programme Management



Innovation ID:232

Title of Innovation: Vulnerability Mapping for TB- An AI Model

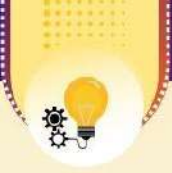
Organization: Wadhwani Institute for Artificial Intelligence

Description: Predicting geographic areas vulnerable to TB through geographic and health vulnerability data for targeted case finding activities

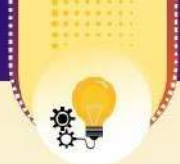
Contact Person: Aparna Chaudhary

Stall ID: 08-208-Z-D

Category of Innovation: Vulnerability mapping>>08. Information Surveillance & Programme Management



03. MULTISECTORAL ACCOUNTABILITY



Innovation ID:196

Title of Innovation: Elim-TB - App based algorithm to Intensified TB Case Finding, tracking and teaching TB

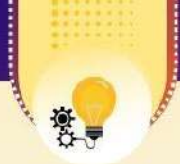
Organization: Fortis Memorial Research Institute, Gurugram

Description: The Drop-Down Based Intensified Case Finding App is an AI-powered tool designed for physicians and pharmacists to enhance early detection of Tuberculosis (TB) through systematic screening. Its structured drop-down interface streamlines Intensified Case Finding (ICF) at the provider level, prompting healthcare professionals to assess symptoms and risk factors efficiently. Additionally, the app integrates prescription monitoring with AI support for antimicrobial stewardship, promoting responsible antibiotic use. AI support facilitates decision-making, referral pathways, ensuring timely intervention. This concept aims to strengthen TB surveillance, optimize treatment, and mitigate antimicrobial resistance (AMR)

Contact Person: Dr. Neha Rastogi

Stall ID: 09-209-1-P

Category of Innovation: Application for Intensified case finding>>09. Multisectoral Accountability



Innovation ID:307

Title of Innovation: Corporate Sector Engagement in TB

Organization: The International Union Against Tuberculosis and Lung Disease (The Union)

Description: The corporate sector in India has the potential to play a key role in the nation's development, particularly in the fight against tuberculosis (TB). Unlike health programs for HIV and Polio, which have seen significant involvement from corporates and public sector undertakings (PSUs), the TB program has been predominantly led by the public sector. Recognizing the need for multisectoral engagement, the International Union Against Tuberculosis and Lung Disease (The Union), in collaboration with the Central TB Division of the Ministry of Health and Family Welfare (MoHFW) and USAID, launched the Challenge TB Project to encourage corporate sector involvement in TB elimination efforts.

In 2019, the Corporate TB Pledge (CTP) initiative was launched by MoHFW, the Government of India, and USAID, with The Union hosting its secretariat. The initiative aimed to mobilize corporate support for TB elimination through several objectives:

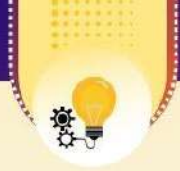
- Promoting awareness and screening via workplace and community interventions.
- Leveraging Corporate Social Responsibility (CSR) resources.
- Providing technical support and fostering partnerships with corporates.

With CTP's backing, over 55 TB-Free Workplaces and more than 140 community-based interventions (including awareness campaigns, testing, and infrastructure support) have been initiated over the past four years. The corporate sector has contributed over USD 6.5 million to support these efforts during this period.

Contact Person: Mohd Shadab

Stall ID: 09-210-2-P

Category of Innovation: Corporate Sector Engagement>>09. Multisectoral Accountability



Innovation ID:249

Title of Innovation: Leveraging the potential of multi-sectoral collaboration towards ending TB in Himachal Pradesh, India

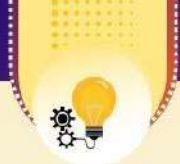
Organization: National Health Mission- Himachal Pradesh

Description: Himachal Pradesh is a northern state situated in the western Himalayas with difficult terrain and snow-bound hard-to-reach geographies. The state of Himachal Pradesh is constantly designing newer innovations to improve access of health services and across the state especially in these remote areas. The Engagement of all the ministries and departments of the government toward ending TB presents a significant opportunity for a people's movement in India especially in Himachal Pradesh. A multi-sectoral engagement approach has been adopted in Himachal Pradesh, India towards achieving TB targets.

Contact Person: Dr. Gopal Beri

Stall ID: 09-211-3-P

Category of Innovation: Multisectoral collaboration>>09. Multisectoral Accountability



Innovation ID:181

Title of Innovation: AHPI Led Consortium of Private Hospitals for Ensuring Uniform High Standards of TB Care through STEPS

Description: The Association of Healthcare Providers India (AHPI), a non-profit representing over 15000 private hospitals across 20 states, launched the AHPI End TB Initiative to mobilize the private sector in support of the nations TB elimination efforts.

To ensure accountability in TB elimination, AHPI introduced the 'AHPI End TB Initiative with technical support from The Union. AHPI worked with member corporate hospitals to ensure TB care quality met national standards and advocated for the establishment of STEPS (System for TB Elimination in Private Sector) centers. These centers implemented a single-window system for TB care and regular follow-up with patients via phone to support adherence in an after-sales care model. AHPI also initiated a private hospital-led self-governance mechanism, creating regional and national consortiums of private hospitals to ensure uniform high standards of TB care across India. These consortiums provide platforms for self-assessment, policy advocacy, and fostering public-private partnerships.

AHPI, in collaboration with The Union and under the leadership of the Central TB Division, established three state-level consortiums in Uttar Pradesh, Haryana, and Delhi, and one National Consortium for a TB-Free India. To date, over 1,000 STEPS centers have been set up by member hospitals. Additionally, intensified case finding integrated with STEPS centers has been initiated in four member hospitals.

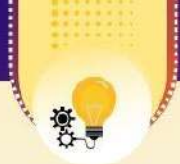
Corporate hospitals are increasingly committed to supporting TB elimination efforts. Organizations like AHPI can serve as a bridge, creating low-cost, sustainable systems for private sector engagement in TB care."

Organization: AHPI - Association of Healthcare Providers (India)

Contact Person: Dr Sunil Kumar Khetarpal

Stall ID: 09-212-4-P

Category of Innovation: Private Health Sector Engagement>>09. Multisectoral Accountability



Innovation ID:240

**Title of Innovation: STEPS (System for TB Elimination by Private Sector):
A unique model of private sector engagement from Kerala State**

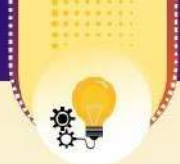
Organization: State TB Cell, Kerala

Description: The STEPS strategy increased TB notifications in Kerala's private sector from 2018 to 2023 and treatment success rates remained comparable to the government sector. Despite the decline in notifications during the COVID-19 pandemic, an upward trend in notifications from the private sector was obvious. Thus, STEPS showcases a sustainable, replicable patient support model, leveraging private-sector engagement and public-sector recognition.

Contact Person: Dr. Rajaram Kizhakkekandiyil

Stall ID: 09-213-4-P

Category of Innovation: Private Health Sector Engagement>>09. Multisectoral Accountability



Innovation ID:266

Title of Innovation: Strategic Implementation of Diagnostic Stewardship Program tailored for Tuberculosis

Organization: Amrita hospital, Faridabad

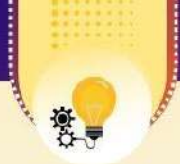
Description: As a part of Anti tubercular Treatment Stewardship programme ATTSP in our institute, a multidisciplinary team including an administrative champion, pulmonologist, infectious disease specialist, clinical microbiologist and clinical pharmacists, Infection Control nurse and IT professional were included. As a part of Diagnostic stewardship, to promote practices our team oversee into many methods like traditional Diagnostic Methods Sputum microscopy, chest radiology, culture based diagnostics, molecular diagnostics cartridge based nucleic acid amplification test CBNAAT, Line probe assay LPA, antigen-testing like MGIT Mycobacterium Growth Indicator Tube.

As the diagnostics getting advanced, it is crucial to ensure that these advancements are accessible and applicable to the patient which is made possible in our settings to effectively combat tuberculosis. The clinical team will be performing rounds and evaluating proven positive cases, adding the recommendation and documenting on patient case sheets. The compliance rates to the recommendations. The files were audited for compliance by the laboratory professionals, clinical care teams. The acceptance rates for diagnostic interventions were around 60 percentage so far

Contact Person: Dr Sanjeev K Singh

Stall ID: 09-214-5-P

Category of Innovation: Quality Control>>09. Multisectoral Accountability



Innovation ID:259

Title of Innovation: The QR code for 100 percent Screening A digital innovation in Screening and Management

Organization: Sehgal Neo Hospital

Description: Sehgal Neo Hospital (SNH) is at the forefront of the fight against TB, leveraging innovative solutions to enhance awareness, detection, and treatment adherence. SNH has organized TB screening camps for staff, families, and the community, particularly in slum areas. We actively promote the Nikshay Mitra Program, collaborate with the District TB Officer (DTO), and create educational materials for staff and community awareness.

As part of our 100-Days Intensified Campaign on TB, we have introduced a cutting-edge QR code-driven screening model that has revolutionized how TB is detected and managed in our hospital and surrounding community.

The Process: We implemented a QR code-based digital screening system in every OPD and ER. Patients are encouraged by OPD TB-links to scan the QR code, initiating a self-screening for 10 TB-related symptoms for positive symptoms. If the result is negative, a ""screened"" stamp is placed on the prescription for the doctors awareness. If any symptom is flagged positive, a "10-symptom" stamp prompts further consultation and review. STEPS links across relevant departments ensure all patients are screened for TB.

The Innovation: The QR code technology has streamlined the screening process by digitizing data collection and enabling real-time monitoring. The system automatically sends data to the TB coordinator, who analyses patient information, creates Nikshay IDs, and ensures follow-ups. This innovation allows for faster, more efficient screenings and timely patient management.

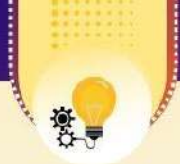
Achievements:

Since implementing the QR code system on January 11, 2025 till February 16 2025, we have screened over 6372 patients. Out of these, 467 suspected TB cases have been identified and registered on the Nikshay platform. Through real-time data tracking and follow-up, 70 Nikshay IDs have been successfully closed, indicating that patients are receiving timely treatment and care."

Contact Person: Dr. Narin Sehgal

Stall ID: 09-215-6-P

Category of Innovation: Selfscreening tool>>09. Multisectoral Accountability



Innovation ID:93

Title of Innovation: Early TB Detection Among Diabetic Employees of BEST Mumbai

Organization: BRIHANMUMBAI ELECTRIC SUPPLY AND TRANSPORT UNDERTAKING (B.E.S.T)

Description: Brihanmumbai Electric Supply and Transport BEST Undertaking launched a TB screening initiative for diabetic employees integrating Interferon Gamma Release Assay IGRA and chest X ray for early detection of TB infection and disease

The Objective of the initiatives are the following:

- Strengthen TB case detection in diabetic BEST employees
- Implement systematic screening using IGRA and chest X rays
- Enable early diagnosis timely treatment and TB prevention
- Reduce TB related revenue loss for BEST
- Implementation and Results
- Target group BEST employees with diabetes more than two thousand identified
- Screening One thousand six hundred screened three hundred eighty IGRA tested two hundred ninety two X rays conducted
- Results: One hundred seventy one IGRA positive cases thirteen abnormal X rays one TB case diagnosed one hundred sixty two employees initiated on TB preventive treatment
- Referral Positive cases linked to BMC health centers for further testing and care

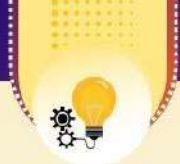
Impact and Scalability

- This workplace driven TB diabetes screening model helps
- Prevent TB progression and workplace transmission
- Ensure timely treatment and improved health outcomes
- Reduce revenue loss and improve workforce productivity
- Serve as a scalable model for public and private sector workplaces

Contact Person: ANILKUMAR SINGAL

Stall ID: 09-216-7-P

Category of Innovation: Workplace intervention>>09. Multisectoral Accountability



Innovation ID:237

Title of Innovation: Paramount's TB Free Workplace Program

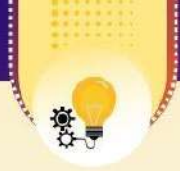
Organization: Paramount Products Pvt. Ltd.

Description: Paramount Products Pt. Ltd. Is Privately owned and family operated; a pioneer in the field of garment export from India since its launch in 1973. Around 5 decades of diverse international experience in Women's and Kids wear, has a strong supply chain and technical expertise. Total workforce is 9000 employees. Total 8 well equipped state-of-art Manufacturing Units. Monthly production capacity of more than 15 million garments. Our motivation for initiating the TB-free workplace program in April 2023 is rooted in our commitment to ensuring the health, safety, and well-being of our employees.

Contact Person: Sonam Chaurasia

Stall ID: 09-217-7-P

Category of Innovation: Workplace intervention>>09. Multisectoral Accountability



Innovation ID:285

Title of Innovation: Welspun TB Mukh Abhiyaan

Organization: Welspun Living Limited, Vapi, Gujarat

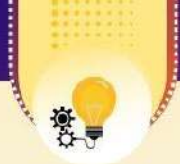
Description: Wel_Aarogyam TB Vree Workplace Model has been created and implemented by me at Welspun Vapi. I have been able to create this successful model only after learning issues that arose from an ideally created model. I had been a speaker at "Capacity Building of District TB Officers on TB-Free Workplace Intervention Strategies", scheduled for 13th December 2024, at the Mental Hospital Auditorium, Ahmedabad, Gujarat. As in a textile industry how to do awareness, carry out screening and treat patients is my basic concept.

Contact Person: Dr. Ritisha Bhatt

Stall ID: 09-218-7-P

Category of Innovation: Workplace intervention>>09. Multisectoral Accountability

04. COMMUNITY ENGAGEMENT



Innovation ID:32

Title of Innovation: Game based interactive tools for imparting health literacy at mass level

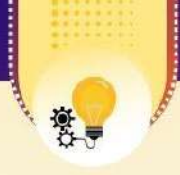
Organization: ICMR-National Institute for Research in Tuberculosis

Description: Public health intervention to improve TB literacy among young adolescents and the young population has not received sufficient attention in India. With this felt need to develop and test a participatory intervention for improving TB literacy, a proof of concept crossword puzzle game was developed using interactive gaming principles to enhance TB awareness. Featuring twenty engaging questions, the puzzles covered key aspects such as interesting facts about TB, symptoms, dos and don'ts, and treatment. Designed with an engaging and easy-to-follow language style, the game aimed to improve TB literacy among adolescents and young individuals. This puzzle-based tool was piloted among 200 students studying in Chennai metropolitan city of Tamil Nadu, South India. Of the total, 100 students, group A, were exposed to the puzzle-based intervention and the others, group B, were provided an information pamphlet about infectious disease and they were requested to read the pamphlet individually. The efficacy of the game-based intervention for improving TB treatment literacy was assessed before and after the implementation of the intervention. Results showed that significant difference was observed at the end-line, effect size was 0.87, indicating higher literacy in group A, TB puzzle. The test revealed significant improvements in TB literacy from baseline to end-line in both groups in pamphlet group, effect size was 0.51, and in TB puzzle group, effect size was 0.87, with greater gains in the puzzle group.

Contact Person: Karikalan Nagarajan

Stall ID: 10-219-8-P

Category of Innovation: Awareness Generation>>10. Community Engagement



Innovation ID:37

Title of Innovation: Aarogya Avatar (ArAv) - A robotic platform for quality health education on tuberculosis in rural areas

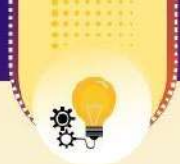
Organization: Kindle

Description: ArAv is a mobile humanoid robotic platform equipped with a tablet projector and AR capabilities to deliver standardized culturally relevant TB education. Using deepfake technology it presents messages through familiar local figures like celebrities Panchayat leaders and MLAs enhancing engagement and awareness. After community health sessions facilitators will register attendees using ArAv platform creating a patient registry. This data will be shared weekly with district health officials to track presumptive TB cases. ASHA ANM and CHOs will use this information for patient follow-ups linking them with telemedicine centers government health facilities and private clinics. Real-time data collection with geo-tagging ensures comprehensive monitoring. Our approach integrates with Nikshay two point zero and other health platforms aligning with the Ayushman Bharat Digital Mission to enhance program efficiency. A dashboard will provide district-level insights enabling targeted interventions better resource allocation and improved disease predictability

Contact Person: Dr. Arup Kumar Chakrabartty

Stall ID: 10-220-8-D

Category of Innovation: Awareness Generation>>10. Community Engagement



Innovation ID:66

Title of Innovation: Photovoice

Organization: Team Surakshay

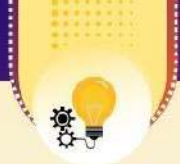
Description: Photovoice as an Educational Tool Photovoice is a participatory storytelling method that captures personal experiences to drive public health action. It has successfully supported HIV treatment adherence in India and can serve as a low-resource tool for TB education and prevention. By empowering individuals to document their experiences, Photovoice aligns with the NTEPs Advocacy, Communication, and Social Mobilization efforts. Intervention Ek Jeet Ki Kahani

This 5-minute Hindi video, featuring a TB champion, combines animations, illustrations, and real footage to provide a comprehensive overview of TB. 1. Introduction - The TB champion shares her initial fears and stigma concerns. 2. Awareness - TB is introduced as a national issue, with curability statistics from the national TB report. 3. Symptoms - Common signs like cough, fever, weight loss, and hemoptysis are highlighted with animations. 4. Spread & Precautions - TB transmission and protective measures, like masks, are discussed. 5. Treatment - The importance of completing TB treatment is emphasized, including the risks of MDR-TB and its extended treatment duration. 6. Nikshay Poshan Yojana - Government support, including free diagnostics and financial aid, is explained. 7. Nutrition - A dietician provides accessible dietary advice for TB patients. 8. Conclusion - The TB champion encourages motivation and awareness. The video, developed with input from medical professionals and TB champions, is available in Hindi with subtitles and plans for further regional adaptations. Implications Unlike conventional awareness campaigns, Photovoice provides authentic, relatable narratives from TB survivors.

Contact Person: Manav Agrawal

Stall ID:10-221-8-D

Category of Innovation: Awareness Generation>>10. Community Engagement



Innovation ID:173

Title of Innovation: Digital Interactive Awareness Solution

Organization: Indian School Of Business

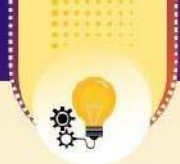
Description: The Digital Interactive Awareness System is an innovative suite of digital solutions designed to combat tuberculosis (TB) stigma in India. Leveraging AR VR technology, interactive animation, and AI-driven chatbots, DIAS creates engaging, educational, and empathy-driven experiences to reshape public perception of TB.

Users can experience the stigma and challenges faced by TB patients, fostering empathy and awareness. VR-based role-playing scenarios help healthcare workers and the public understand the real-life impact of TB stigma. Schools and colleges can integrate progressive storyline-based educational games that challenge myths, encourage positive behaviors, and promote informed decision-making about TB. A 24/7 virtual health assistant that provides stigma-free TB awareness, answers queries in real-time, and ensures access to reliable, non-judgmental information, especially in remote areas.

Contact Person: Stephen Anand

Stall ID: 10-222-8-D

Category of Innovation: Awareness Generation>>10. Community Engagement



Innovation ID:210

Title of Innovation: Jaante Ho Na Camapign

Organization: State TB Cell, National Health Mission, Madhya Pradesh

Description: Standard economic theory assumes that if people are provided with information, they will act on it in such a way as to maximise personal benefit and minimise their costs, a concept often referred to as "rational choice theory. The AIDA (Attention, Interest, Desire, Action) model is an example of an "information deficit model. It is based on the idea that providing information will spark interest, which in turn leads to desire and subsequently to action.

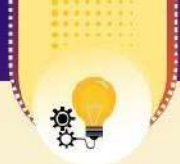
To enhance personal response of patients, visitors and private physicians, STC, Madhya Pradesh, NHM with ACSM-NTSU developed various visuals and merchandise based on the AIDA model for the private sector. The aim is to empower patients and visitors with comprehensive TB knowledge and simultaneously motivate private physicians to adhere to NTEP guidelines for mandatory TB notification and public health action.

Madhya Pradesh is the first state to mark the initiation of "Jaante Ho Na Campaign". So far 49 of 52 districts have implemented the campaign. With an aim of addressing the TB stigma and socioeconomic factors. The goal of the campaign is to promote standard TB Care, TB awareness and treatment adherence. The campaign further aims to bring about change in the behavior of patients, visitors, and private physicians. The JHN Campaign seeks to increase demand for TB testing by providing patients, visitors, and private physicians with an opportunity to assimilate given information and discussed with peers and private physician about TB.

Contact Person: Tabish Khan

Stall ID: 10-223-8-P

Category of Innovation: Awareness Generation>>10. Community Engagement



Innovation ID:212

Title of Innovation: Breaking the Silence: Citizen Dialogues on TB Stigma Through Applied Theatre

Organization: Institute of Public Health

Description: We propose using participatory applied theatre methods, led by the TB Survivors Network, as a transformative approach to eliminate TB stigma. Methods such as invisible theatre, image theatre, and forum theatre will be used to spark dialogue on TB stigma in various community settings, including hospitals, schools, and workplaces. The initiative will be rolled out in high-burden states where TB Survivors Networks are active, following a three-phase approach:

- Capacity building of TB survivor networks on applied theatre techniques.
- Applied theatre interventions in diverse community settings.
- Evaluation and development of community engagement models for TB stigma elimination.

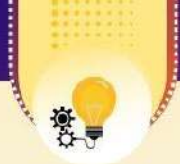
Applied theatre doesn't require professional artists or large resources; with minimal training and support, it can be institutionalized through existing networks. The methods focus on embodied practice, empathy, and creating safe spaces for reflection and learning. These strategies aim to:

- Generate dialogue on TB stigma.
- Facilitate collective understanding of social barriers to TB care.
- Empower communities to take action against TB inequities.
- Promote changes in knowledge, attitudes, and behaviors towards accessing TB care.

Contact Person: Dr.Meena Putturaj

Stall ID: 10-224-8-P

Category of Innovation: Awareness Generation>>10. Community Engagement



Innovation ID:230

Title of Innovation: PD - ETC(Prevention and detection TB Through Theatre Campaign)

Organization: Blossom Trust

Description: Blossomtrust systematically addresses systemic failures in Tuberculosis TBprevention strategies through a rationally designed intervention model that integrates behavioural cultural adaptation and institutional collaboration. By conducting Edu-Clowns campaign dismantles socio psychological barriers that perpetuate TB's spread. It ensures behavioural change about TB and TB treatment among the communities for Prevention focusing on expelling myths and misconceptions. The audience will also be able to read the IEC and Audiovisual materials on TB and attend counselling sessions organised in separate Booth where a Counsellor will be available.

The Educloons will support and guide the symptomatic persons to our Booth where the Counsellor will direct them to the nearest NTEP centres for early diagnosis and treatment. The campaign will also contribute to identifying the Missing Millions. Group media sessions are conducted to get their feedback.

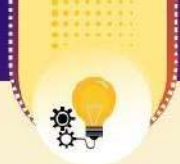
The achievable outcomes are ensuring behavioural change through education on TB increasing the number of people visiting the hospitals and NTEP centres prevention of new TB infections increase in the number of TB patients detected and cure by referring symptomatic persons and raised awareness about TB.

Our Educloons campaigns also addresses the issue of Stigma and Discrimination related to TB by provoking the people to think, analyse , change behaviours and make informed decisions to prevent, detect and treat TB at its early stage.

Contact Person: Mercy Annapoorani

Stall ID:10-225-8-P

Category of Innovation: Awareness Generation>>10. Community Engagement



Innovation ID:260

Title of Innovation: Youth Against TB - Health Volunteers

Organization: Reaching Sky Foundation

Description: Youth Against TB is an innovative digital-first, volunteer-driven initiative designed to mobilize young people in tuberculosis (TB) awareness, early detection, and prevention. Developed under HealthVolunteers.in, this initiative leverages structured learning, gamification, and community engagement to create a scalable and impactful youth movement against TB in India.

At its core, Youth Against TB operates on a Learn, Act, Engage model:

- Volunteers enroll in a two-hour certified online course (Tuberculosis Volunteer Toolkit) to understand TB's causes, prevention, and treatment.
- Equipped with IEC materials, digital toolkits, and action guidelines, volunteers engage in community awareness campaigns, myth-busting sessions, and local outreach efforts.
- Engage : A gamified engagement model ensures continued participation through leaderboards, recognition programs, and mentorship opportunities.

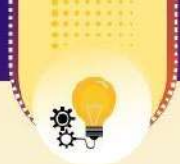
The technology backbone of this initiative includes:

- Web-Based CMS & CRM : A customized volunteer management platform powered by Salesforce for Nonprofits to track enrollments, monitor actions, and automate engagement.
- AI-Driven Learning Modules: Automated training courses with interactive learning assessments and real-time impact measurement.
- Digital & Social Media Advocacy Tools – Volunteers utilize customized templates (Canva, Google Workspace) and pre-designed social campaigns to amplify TB awareness.
- Nikshay & TB Mukht Bharat Integration : Volunteers are mapped to locations via Nikshay, supporting screening efforts, early detection, and TB treatment adherence.

Contact Person: Rishi Kumar Banshiwal

Stall ID: 10-226-8-D

Category of Innovation: Awareness Generation>>10. Community Engagement



Innovation ID:322

Title of Innovation: Community Radio-Led TB Awareness & Behavior Change (CR-TB ABC) Model

Organization: Seeking Modern Applications For Real Transformation (SMART)

Description: For the first time, the Community Radio-Led TB Awareness and Behavior Change Model (CR-TB ABC), developed by SMART, places Jan Bhagidari at the core of TB elimination efforts. This model transforms Community Radio from a passive information channel into an active catalyst for behavior change. CR-TB ABC fosters co-creation by integrating local knowledge, survivor voices, and government interventions into a participatory framework that drives early detection, stigma reduction, treatment adherence, and community-led support for TB patients.

Key components of the model include:

- Leveraging CRS' trusted local networks to engage ASHAs, CHOs, and ANMs.
- Hyper-local storytelling to connect with the community.
- Real-Time Impact Tracking, monitoring listener engagement, screenings, Ni-kshay registrations, and treatment adherence.
- Engaging PRIs, MLAs, Ni-kshay Mitras, and TB survivors.
- Innovative outreach through mobile radio vans, door-to-door campaigns, nukkad natak, and survivor-led dialogues.
- Two-Way Learning, where State TB Officers train community broadcasters for accurate messaging, and CRS provide feedback on ground realities.
- Multi-Platform Amplification, engaging local and social media for broader reach.

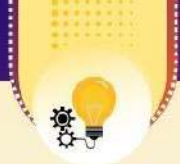
Building on the success of previous community radio-led TB action in 48 high-burden districts across seven states (Madhya Pradesh, Chhattisgarh, Haryana, Himachal Pradesh, Manipur, Uttar Pradesh, and Bihar), which resulted in 135,436 screenings through 57 community radio stations with support from The Union and the Gates Foundation, SMART launched the CR-TB ABC model on December 7, alongside the 100-Day TB Elimination Campaign.

This initiative is now making an impact across 34 high-burden TB districts in Bihar and Uttar Pradesh through 45 community radio stations. In a short time, it has trained over 50 reporters, reached 2,000 villages, aired 300+ interviews with health officials, mobilized 14,000+ individuals for TB testing, facilitated 3,000+ tests, and generated over 300 articles in local media.

Contact Person: Archana Kapoor

Stall ID: 10-227-8-P

Category of Innovation: Awareness Generation>>10. Community Engagement



Innovation ID:343

**Title of Innovation: NTEP 100 day campaign for TB Mukd Bharat
Abhiyaan**

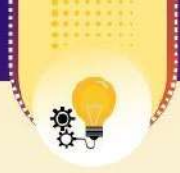
Organization: Central TB Division, MoHFW

Description: Central TB Division would like to participate in the Summit to use the platform to disseminate the information about the 100 days campaign and raise TB awareness among visitors. This participation is solicited as a part of Janbhagidari of the campaign. For ensuring a uniform branding of the campaign IEC materials were created centrally and shared with the States UTs. The NTEP stall will show case campaign branding Posters Hoardings Pamphlets video and radio spot etc. to educate visitors about the TB symptoms prevention early testing Nutrition Ni-kshay Poshan Yojana Ni-kshay Mitra Free testing treatment services available at all government health facilities like Ayushman Arogya Mandirs Health centres etc

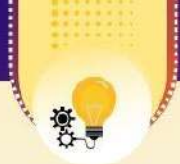
Contact Person: Shivani Sharma

Stall ID: 10-228-8-S

Category of Innovation: Awareness Generation>>10. Community Engagement



05. SAMPLE, SAMPLE COLLECTION, DRUGS CONSUMABLES AND LOGISTICS



Innovation ID:154

Title of Innovation: K8 spider Sample collection and concentration device for Childhood TB

Organization: All India Institute of Medical Sciences (AIIMS) Bibinagar Telangana

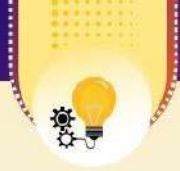
Description: K8 Spider is an innovative device designed to improve pediatric TB diagnostics by efficiently concentrating and collecting Mycobacterium tuberculosis from clinical samples. It features sterilized Khadi braid tied to surgical silk, passed through the lateral eye of pediatric nasogastric tube, with other end attached to the drainage part. The device is packed and sterilised using ethylene oxide. This design enables retrieving K8 spider through the nasogastric tube without any adverse event, contamination from throat, nasal secretions and allows parallel gastric content aspiration.

In Vitro Validation The Khadi braid, crafted from highly absorbent hand spun cotton yarn, demonstrated excellent MTB adsorption capacity in invitro tests under the ICMR STS project at MGIMS, Wardha. In Vivo Validation Safety testing of the K8 Spider confirms that the Khadi braids are smooth, nontoxic, lightweight, and non traumatic, with no known allergens Annexure II. The surgical silk used is biocompatible, flexible, and strong, ensuring safe movement with peristalsis and minimizing potential complications. The device was tested on two children with known pulmonary TB. Clinical trials at MGIMS showed that both gastric aspirate and K8 Spider samples were positive by PCR. MTB grew in both, confirming that the K8 Spider provides results comparable to traditional methods. Device is in final stages of patent process with ICMR IPR.

Contact Person: Dr Rahul Narang

Stall ID: 06-159-A-S

Category of Innovation: Biological Sample Collection>>06. Sample, Sample Collection, Drugs Consumables and Logistics



Innovation ID:321

Title of Innovation: Mywave Device

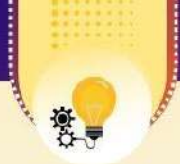
Organization: Mylab Discovery Solutions

Description: Mywave Device: It is for enhancing sputum production for diagnosing and treating respiratory ailments, including TB. It uses resonance frequencies to clear airways and reduce mucus viscosity, simplifying collection for healthcare professionals. This improves TB diagnosis efficiency, reduces exposure risks, and supports public health control and cost savings.

Contact Person: Gautam R. Wankhede

Stall ID: 06-160-A-S

Category of Innovation: Biological Sample Collection>>06. Sample, Sample Collection, Drugs Consumables and Logistics



Innovation ID:40

Title of Innovation: Kits for Improvement of Diagnosis TB and Drug Resistance TB

Organization: Advanced Microdevices Pvt. Ltd.

Description: We have Developed three kits namely, TB Detect, TB Concentration & Transport, and TB DNA Extraction kits under a BIRAC-funded SBIRI collaborative project awarded to Advanced Microdevices Pvt Ltd industry partner, AIIMS New Delhi and THSTI Faridabad academic partners, NITRD New Delhi and TB Hospital Ambala hospital sites.

1st Kit: TB Detect Kit TB Detect has a Bio-safe Fluorescent Microscopy Filter BioFM-Filter, which improves the sensitivity of smear microscopy in comparison to conventional smear microscopy.

Kit Protocol Briefly, the TB Detect contains a Dissolving Solution to decontaminate and liquefy the sputum, which helps in filtration through the BioFM-Filter. Kit Technology

2nd Kit: TB Concentration & Transport Kit This kit contains a Transport-Filter Trans-Filter for immobilizing sputum on a bio-safe filter membrane to enable sputum transport at ambient temperature.

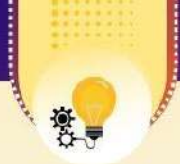
Kit Protocol Briefly, the Dissolving Solution of the TB Concentration & Transport kit is mixed with 100 microliters of sputum in a ratio of 4 to 1 volume per volume and incubated for 30 minutes.

3rd Kit: TB DNA Extraction Kit Expected Outcome These kits have been approved by ICMR in 2023 and recommended to the Central TB Division."

Contact Person: Dr. Ashawant Gupta

Stall ID: 06-161-B-S

Category of Innovation: BioSample Processing>>06. Sample, Sample Collection, Drugs Consumables and Logistics



Innovation ID:49

**Title of Innovation: A Non-Invasive Stool-Based Xpert Assay:
Revolutionizing Pediatric TB Diagnostics**

Organization: Squad Medicine and Research

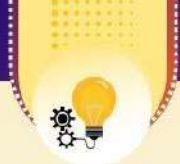
Description: Our innovation addresses the critical need for a non invasive, accurate, and child friendly method for diagnosing pulmonary tuberculosis in pediatric patients, who often struggle to produce sputum samples required for traditional testing. We propose a streamlined and efficient approach utilizing fecal samples for TB detection, leveraging the WHO recommended Xpert MTB or RIF Ultra assay. This method, based on the Simple OneStep stool processing technique, simplifies sample preparation, making it feasible even in resource limited settings with minimal training.

The SOS stool method offers a less stressful and painless alternative to invasive procedures like gastric aspiration or induced sputum collection, improving the acceptability of TB testing among children and caregivers. Few Studies have demonstrated the effectiveness of stool based Xpert testing, with sensitivity estimates ranging from 59 percent to 76 percent and specificity exceeding 98 percent compared to traditional methods. By using stool samples, our approach can detect TB, and also identify rifampicin resistance, a marker for multidrug resistant TB. Our method uses the same buffer and cartridge as those used for the Xpert sputum test.

Contact Person: Tarun Kumar Suvari

Stall ID: 06-162-B-P

Category of Innovation: BioSample Processing>>06. Sample, Sample Collection, Drugs Consumables and Logistics



Innovation ID:102

Title of Innovation: Truelyse - Truenat MTB Ultima for Oral Swab-Based TB Testing

Organization: Molbio Diagnostics Limited

Description: "Truelyse is a rapid microbial cell lysis system designed to streamline nucleic acid extraction, enabling TB testing from non-sputum samples such as oral swabs. This breakthrough technology complements Truenat MTB Ultima, an advanced molecular assay with enhanced sensitivity, making oral swab-based TB diagnosis a practical reality.

The Truelyse system utilizes high-frequency mechanical agitation to disrupt bacterial cells within 90 seconds, eliminating the need for complex reagents or lengthy processing. The released nucleic acids can be directly amplified on Truenat micro PCR chips or further processed via Trueprep for enrichment and purification. Unlike conventional sputum-based diagnostics, this approach eliminates the challenges associated with sample collection in patients who cannot produce sputum, such as children, elderly individuals, and immunocompromised patients.

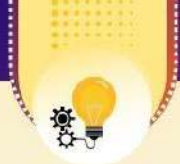
- Oral swab-based TB testing with Truelyse and Truenat MTB Ultima offers significant advantages:
- Enables TB detection in minutes, reducing turnaround time.
- Designed for use in field settings, making TB diagnosis accessible in rural and resource-limited areas.
- Facilitates easier and more patient-friendly testing.
- Seamless Workflow Integration: Works directly with Truenat micro PCR, ensuring high sensitivity and specificity.

This innovation is particularly valuable for pediatric TB detection, HIV-TB co-infections, and community-based screening programs, where conventional methods face significant limitations. By expanding TB diagnostic capabilities beyond sputum, Truelyse and Truenat MTB Ultima represent a transformative step in TB detection, ensuring more inclusive, rapid, and decentralized screening solutions.

Contact Person: Cindrella Das

Stall ID: 06-163-B-S

Category of Innovation: BioSample Processing>>06. Sample, Sample Collection, Drugs Consumables and Logistics



Innovation ID:162

Title of Innovation: Bacteriophage lysin to control overgrowth of normal flora in processed sputum specimens for rapid diagnosis of TB

Organization: ICMR-NATIONAL INSTITUTE FOR RESEARCH IN TUBERCULOSIS

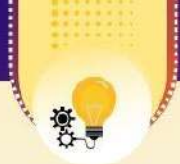
Description: "Cocktail of three bacteriophages namely Chedec 11, Chedec 20 and Chedec 21 were used as an alternative to the traditional use of antibiotics to control the overgrowth of normal flora in sputum specimens. Bacteriophage lysin extracted from these three phages were used to supplement bacteriophages for the effective control of normal flora. Subsequently, bacteriophage lysin alone was used as a substitute for antibiotics to detect M. tuberculosis from sputum samples using BACTEC MGIT 960 system. The genome sequencing of these bacteriophages revealed that all the three bacteriophage lysin showed 99 percent similarity. Hence, it was proposed to clone and express lysin from Chedec 11 and produce the same in bulk leading to the commercialization as a supplement for the growth based rapid methodologies. The multicentric validation of phage lysin to control normal flora in processed sputum specimens in comparison with antibiotic (MGIT PANTA) for rapid detection of Mycobacterium tuberculosis using BACTEC MGIT 960 system is under progress. Novelty - The phage lysin proposal is under the translational research priority of ICMR. The bacteriophages and lysins used in this study is patented through Intellectual Property Unit of ICMR (Patent number 269659).

Current status - Large scale production of phage lysin will be attempted and tested initially at NIRT for the intact of phage lysin and its desired effect on sputum specimens. Multicentric validation will be executed once the initial standardization is complete and satisfactory. Upon successful completion of the project, the lysin will be commercialized to replace the existing use of PANTA in growth based rapid methodologies including MGIT which is being used in the National TB Elimination Program (NTEP)."

Contact Person: BALAJI SUBRAMANYAM

Stall ID: 06-164-B-P

Category of Innovation: BioSample Processing>>06. Sample, Sample Collection, Drugs Consumables and Logistics



Innovation ID:306

Title of Innovation: Dried blood spot based method for large scale therapeutic drug monitoring of first-line anti-TB drugs

Organization: Modern Diagnostic and Research Centre

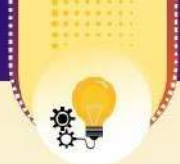
Description: Modern Diagnostic and Research Centre (MDRC) has developed a method for simultaneous quantification of all four first line anti-tuberculosis drugs (rifampicin, isoniazid, pyrazinamide, and ethambutol) in a dried blood spot (DBS) sample. The DBS sample collection requires minimal skills and even a lay person can easily collect the sample. A drop of blood obtained by a small prick on the finger using a lancet is applied to a chemically treated filter paper. After drying, the drugs are stable at temperatures up to 42 degree centigrade for 7 days and the DBS sample can be transported anywhere in the world with minimal cost at ambient conditions. The samples can then be analyzed using a developed LC-MSMS method that quantifies all four drugs in just 5 minutes. This is the first method available for simultaneous quantification of all four first-line anti-TB drugs in a DBS sample.

The therapeutic drug monitoring is expected to bring down TB incidence in the country and world wide rapidly by reducing the time required for sputum conversion to negative. Due to reduced infective period, the number of persons in which a TB patient spreads the disease will also be significantly reduced, bringing the TB incidence down in a short period of time after implementation of TDM.

Contact Person: Dr Prem Kumar Gupta

Stall ID: 06-165-C-P

Category of Innovation: Blood Sample Collection>>06. Sample, Sample Collection, Drugs Consumables and Logistics



Innovation ID:275

Title of Innovation: Centralized AKT Drug Distribution: A Strategy to monitor Compliance and Prevent Drug Resistance for TB Elimination

Organization: All India Institute of Medical Science, Rajkot

Description: This initiative focuses on establishing a centralized procurement and distribution system for antitubercular (AKT) drugs under the National Tuberculosis Elimination Program (NTEP), aimed at mitigating drug-resistant tuberculosis (DR-TB). The core objective is to streamline AKT availability through government-controlled channels, ensuring consistent drug quality, better treatment adherence, and effective monitoring to combat unauthorized sales and reduce drug resistance.

The system will include a government-initiated, centralized AKT procurement mechanism that enforces single-channel distribution. All AKT drugs will be distributed solely through government-authorized distributors, with pharmacies required to register under NTEP to maintain comprehensive TB drug records. Prescription-based sales will be mandated to prevent unauthorized access to AKT drugs.

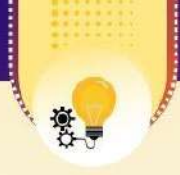
Advanced monitoring will be implemented through real-time drug stock tracking, QR-coded drug packaging for end-to-end traceability, and integration with the NIKSHAY digital system to monitor drug movement across the public and private sectors. This will enhance oversight of drug usage, adherence, and potential misuse, supported by real-time notifications to authorities and regular audits.

Regulatory measures will include amendments to the Drugs and Cosmetics Act, introducing strict penalties and legal consequences for unauthorized AKT drug sales. Pharmacies and private healthcare providers will need a special license to dispense these drugs, with non-compliance resulting in license suspension or revocation.

Contact Person: Dr. Kiran G. Piparva

Stall ID: 06-166-D-P

Category of Innovation: Centralized Supply Chain Management>>06. Sample, Sample Collection, Drugs Consumables and Logistics



Innovation ID:36

Title of Innovation: Drones for Expanding Diagnostic Landscape for Tuberculosis & Delivering Anti-tuberculosis in the Himalayan Region

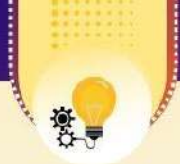
Organization: AIIMS Rishikesh

Description: AIIMS Rishikesh has conducted pilot trials using drones for delivering medicines to health facilities in remote locations. In this project, we plan to collect samples from symptomatic patients and their relatives who are asymptomatic, to cover a broader epidemiological landscape where diagnostic services are lacking or unavailable, thus reaching a larger population. The primary outcome of this project is to integrate drones for the rapid transportation of medications and samples to hard-to-reach areas and recommend incorporating this into the health supply chain under the National Tuberculosis Elimination Program (NTEP). The future plan is to upgrade the drone technology to cover a broader epidemiological landscape within the state, geo-tagging patients location with latitude and longitude coordinates, connecting them through telemedicine, and delivering medications directly to patients homes or nearby locations."

Contact Person: Jitender Gairolla & Meenu Singh

Stall ID: 06-167-E-D

Category of Innovation: Drone based logistics>>06. Sample, Sample Collection, Drugs Consumables and Logistics



Innovation ID:258

Title of Innovation: Feasibility of drone based transport of for TB Samples & Medications in Tribal & Hilly district of Telangana

Organization: ICMR-Hq, New Delhi

Description: This project explores the feasibility of using drones for the rapid and efficient transportation of sputum samples from Primary Health Centers (PHCs) to district TB units, aiming to reduce patient turnaround time (TAT) and enhance accessibility to diagnostic services. The initiative integrates drone-based logistics with existing healthcare frameworks to optimize sample transport, minimize delays, and ensure uninterrupted drug delivery to PHCs.

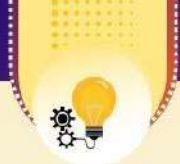
A multi-faceted approach was adopted, incorporating community engagement strategies such as ASHA worker training, patient sensitization programs, and stakeholder collaboration with health authorities and regulatory bodies. Public-private partnerships and technological innovations further strengthened the operational efficiency and economic viability of the system. Key benefits observed included improved diagnostic efficiency, enhanced treatment adherence, and reduced logistical bottlenecks. Additionally, the project demonstrated cost-effectiveness over conventional transport methods by lowering infrastructure, manpower, and fuel costs while increasing service reach.

By leveraging drone technology, this initiative presents a scalable model for strengthening TB control efforts and healthcare logistics in resource-limited settings. The findings provide critical insights for policymakers and healthcare professionals, emphasizing the role of drones in bridging healthcare gaps and advancing India's National TB Elimination Program (NTEP). This model could be further expanded to other medical logistics applications, reinforcing the potential of drones as a transformative tool in public health.

Contact Person: Dr. Sumit Aggarwal

Stall ID: 06-168-E-S

Category of Innovation: Drone based logistics>>06. Sample, Sample Collection, Drugs Consumables and Logistics



Innovation ID:287

Title of Innovation: Drone-Enabled TB Sample Transport and Medicine Delivery

Organization: Redwing Labs

Description: "Redwing Labs is revolutionizing healthcare logistics by leveraging drone technology to improve TB diagnosis and treatment access in remote and underserved regions. Our innovation focuses on two critical aspects: timely specimen transport and efficient medicine delivery. By deploying drones, we significantly reduce the turnaround time for TB sample collection and diagnosis, ensuring rapid detection and timely treatment initiation.

Our drones are equipped to transport diagnostic samples from rural health facilities to centralized laboratories, eliminating logistical barriers and enhancing the accuracy of TB detection. Additionally, we support last-mile medicine delivery, ensuring that patients receive essential TB drugs without delays. This approach not only improves patient outcomes but also strengthens the overall healthcare supply chain.

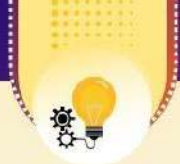
Our solution is integrated with a real-time tracking system that enables stakeholders to monitor logistics, optimize delivery routes, and ensure regulatory compliance. By reducing dependency on conventional road transport, we address challenges posed by difficult terrain, seasonal disruptions, and infrastructure gaps.

Through collaborations with government agencies, public health organizations, and research institutions, we have validated our approach in multiple pilot projects. Our system is now ready for broader deployment to strengthen TB programs at scale, enhancing accessibility, affordability, and efficiency in TB care."

Contact Person: Rohit Dewangan

Stall ID: 06-169-E-S

Category of Innovation: Drone based logistics>>06. Sample, Sample Collection, Drugs Consumables and Logistics



Innovation ID:138

Title of Innovation: Enhancing TB diagnosis accessibility utilizing community volunteers in Rajasthan, India

Organization: SPYM- State Technical Support Unit, National TB Elimination Program (Rajasthan)

Description: Rajasthan, India's largest state, faces challenges in conducting widespread TB screenings due to its diverse geography and harsh climate. With population density varying from 17 to 200 individuals per square kilometers, ensuring comprehensive testing for all potential TB cases is a significant challenge. To overcome this, Rajasthan has implemented an innovative approach: incentivizing sample transportation through community volunteers. These volunteers collect TB samples as part of population-based testing and are reimbursed for their travel expenses under the Sample Transportation scheme. This strategy connects testing centers without facilities SPOKE with TB testing centers HUB, minimizing turnaround time. Community volunteers ensure widespread access to diagnostic services.

In 2023, ASHA, Community volunteers in Rajasthan were tasked with referring 3, 5 Presumptive TB Cases per 1000 population monthly, prioritizing vulnerable groups such as TB survivors, their contacts, COVID 19 survivors, co morbid patients, and malnourished individuals. Through this initiative, 10,399 samples were transported to 1,389 DMCs and 148 NAAT sites in Rajasthan by 16,681 ASHA workers and 1,219 volunteers. Notably, the number of bacteriologically confirmed TB patients with valid DRT results for Rifampicin was increased to 68410 76 percent from 63824, 71 percent in 2022 and 78 percent in 2024. Additionally, the average turnaround time for NAAT testing was reduced to 16 days in 2023, and the Presumptive TB Examination rate increased from 1478 in 2022 to 2038 in 2023.

The results indicate a high positivity rate among samples transported with mobility support, facilitating a reduction in treatment initiation time. ASHAs and community volunteers have played a crucial role as treatment supporters in this process.

Contact Person: PRIYANKA SHARMA

Stall ID: 06-170-F-P

Category of Innovation: Sample Transportation>>06. Sample, Sample Collection, Drugs Consumables and Logistics

Innovation ID:193

Title of Innovation: Hub and spoke model TB sample transport using women self help groups in Pathanamthittamthitta,Kerala,India 2024-25

Organization: Directorate of Health Services,Kerala

Description: The Hub and Spoke Model Lab Network is a key thematic area of Navakerala Karma Padhathi 2 under the Ardrum Mission in Kerala. As part of the Shaili program, at-risk individuals for TB, non-communicable diseases NCDs, leprosy, cervical cancer, and breast cancer are identified using the Community Based Assessment Checklist CBAC by ASHA workers during annual health check-ups.

In the financial year 2023-24 Shaili 1, of the 761641 individuals screened, 5256 were identified as TB suspects. In 2024-25 Shaili 2, ongoing, among 510652 individuals screened, 13235 were classified as high risk for TB. However, experience from Shaili 1 revealed a 50 percent non-responsiveness rate when mobilizing at-risk individuals for sputum collection.

To address this, a sample transportation system has been established, integrating primary PHC and secondary CHC care institutions. A dedicated sample transporter is assigned to a chain of 5 to 6 health facilities, ensuring timely sample delivery to a hub laboratory. To enhance sustainability, revenue-generating tests are included alongside TB diagnostics. A nominal fee is charged for non-TB tests from patients above the poverty line, with the revenue shared between spoke institutions hospital management committees and the hub laboratory.

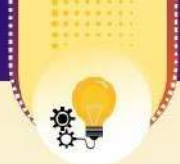
Kudumbashree, Kerala's largest women's self-help group SHG, has traditionally focused on poverty alleviation and community development but has not previously engaged in revenue generation within the health sector. This initiative leverages Kudumbashree's workforce for sample transportation, utilizing the 15th Finance Commission Health Grant until the system achieves financial self-sufficiency.

This model enhances diagnostic accessibility, strengthens the public health infrastructure, and fosters a sustainable, community-driven approach to TB and other disease diagnostics.

Contact Person: Dr Amjith Rajeevan

Stall ID: 06-171-F-P

Category of Innovation: Sample Transportation>>06. Sample, Sample Collection, Drugs Consumables and Logistics



Innovation ID:50

Title of Innovation: TBSend Card: Sputum Transport, Storage, and Electricity-Free DNA Release Device

Organization: Wobble Base Bioresearch Private Limited

Description: The TBSend Card is a cylindrical device designed for the safe collection, preservation, and transportation of sputum samples for nucleic acid testing. It houses a chemically coated stack of filter cards and can be opened from both ends as well as from the side.

To use the device, sputum is added to a buffer-filled vial, mixed well, and then spotted onto the filter card through one end of the device. Once processed, the sample can be safely transported at room temperature. The preserved nucleic acids remain stable on the cards, which should be stored at room temperature, for over six years without degradation.

For nucleic acid extraction, an elution buffer is added through the other end of the device, and the device is placed on a rack for a minute. The nucleic acid-containing buffer (~1.4 mL) is then collected through the side opening. This eluted sample can be directly loaded onto a GeneXpert cartridge or any other CB-NAAT assay system.

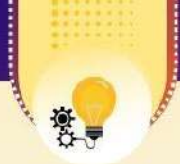
For other nucleic acid amplification tests (NAATs), the 1.4 mL eluate is processed by adding a binding buffer and magnetic beads, followed by mixing and washing on a magnetic rack. The final nucleic acid extract (30–50 μ L) can then be used in various diagnostic platforms, including qPCR, endpoint PCR, isothermal assays, and line probe assays.

The entire process is electricity-free, requires no centrifugation, and is suitable for remote and resource-limited settings. Importantly, the device ensures biosafety during sample handling, transport, and storage.

Contact Person: Pratap Narayan Mukhopadhyaya

Stall ID: 06-172-G-S

Category of Innovation: Transport Medium>>06. Sample, Sample Collection, Drugs Consumables and Logistics



Innovation ID:101

Title of Innovation: RNA WRAPR: A Molecular Transport Medium for TB Sample Collection and Detection

Organization: Azooka Labs Private Limited

Description: RNA WRAPR, an advanced Molecular Transport Medium (MTM), offers a cost-effective, room-temperature solution for TB sample collection, storage, and transport. Originally developed for COVID-19 diagnostics, sold over 1 Million+ units during the national emergency, RNA WRAPR has been market-proven and validated for viral RNA stabilization. Azooka Labs is extending its application to TB diagnostics by validating RNA WRAPR for sputum, blood samples.

Key advantages of RNA WRAPR over existing solutions:

- Room-temperature stability: Preserves nucleic acid integrity for up to 14 days without refrigeration.
- Pathogen inactivation: Ensures safe handling and transport while maintaining sample integrity.
- No risk of contamination: Proven reliability in large-scale deployments.
- Cost-effective & locally manufactured: Addresses the accessibility gap in LMICs.

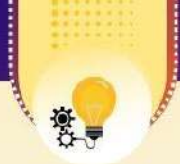
With TB mortality rates rising, RNA WRAPR has the potential to revolutionize TB diagnostics by enabling ambient temperature transport of samples from remote areas to centralized molecular testing facilities.

This innovation will significantly reduce diagnostic delays, improve access to molecular testing, and ultimately support global efforts to end TB.

Contact Person: Dr. Fathima Benazir

Stall ID: 06-173-G-S

Category of Innovation: Transport Medium>>06. Sample, Sample Collection, Drugs Consumables and Logistics



Innovation ID:133

Title of Innovation: Novel Transport Solution To Deter Cold Chain In Sputum Samples Transportation

Organization: King George's Medical University, Lucknow

Description: "Rapid and accurate diagnosis of tuberculosis is essential for effective global control strategies, especially in India, where a structured network of hierarchical diagnostic laboratories has been established in alignment with National Tuberculosis Elimination Program 2021. Under this framework, samples requiring further testing are sent to linked reference labs for further molecular and phenotypic testing, including line probe assays and liquid cultures.

Currently, sputum samples are transported under cold-chain, using gel packs within thermocol boxes to minimize growth of contaminants. This transportation is facilitated by a government-designated agency. However, several practical challenges have arisen, including delays in transportation and failures to maintain the appropriate temperature. Such conditions can obscure the growth of acid-fast bacilli (AFB), resulting in false results and contamination issues. Additionally, the direct handling of sputum samples can be unpleasant, creating discomfort for laboratory staff due to odor.

To address these challenges, we propose a two-pronged strategy:

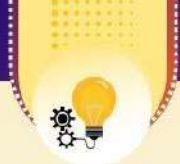
1. Removing the need of cold chain by introducing a Novel Transport Solution: We have developed an innovative, cost-effective solution for the transportation of sputum samples that eliminates the need for a cold chain. Our solution has been granted a patent by the Government of India (Patent No. 422600, Application No. 201611034998, Filing Date: 13.10.2016) and has been successfully tested for staining, liquid culture, and molecular methods.
2. Enhanced Sample Transportation for reducing transportation turn around time: We recommend implementing a rapid sample transportation model similar to the Patient Provider Support Agency (PPSA), which currently facilitates the efficient transport of sputum samples from private clinics to district laboratories. We propose extending this model for the transportation of samples from district labs to reference labs to further streamline the diagnostic process.

This approach aims to improve the reliability and efficiency of tuberculosis diagnostics, ultimately supporting better patient outcomes and advancing public health efforts."

Contact Person: Parul Jain

Stall ID: 06-174-G-P

Category of Innovation: Transport Medium>>06. Sample, Sample Collection, Drugs Consumables and Logistics



Innovation ID:140

Title of Innovation: BiomLife

Organization: Ruhvenile Biomedical OPC Pvt Ltd.

Description: BiomLife is an innovative, formalin free preservation technology that revolutionizes sample collection, transportation, and microbiological analysis without requiring a cold chain. Unlike conventional methods that degrade microbial diversity, BiomLife ensures accurate, reproducible, and reliable data for functional genomics, NGS, PCR, RTPCR, WGS, and OMICs research. BiomLife is CE and ISO certified and globally recognized. BiomLife preserves Mycobacterium tuberculosis at the point of collection, preventing microbial loss and degradation. By stabilizing nucleic acids and proteins at ambient temperature, it eliminates costly cold chain logistics, making TB testing more accessible and scalable in resource limited settings.

Innovative Solutions for TB Testing

- Self administered sample collection with a patented buffer, preserving specimens for over 2.5 years.
- Ambient temperature transport and storage, stabilizing samples for at least 24 hours at 40°C and 70 percent humidity.
- Seamless sample preparation, including revival of microbes.
- Faster PoC diagnostic turnaround times.

BiomLife enhances isolation of 3X DNA and RNA, PCR, RTPCR, NGS, and culture-based TB diagnostics, reducing false negatives and accelerating treatment.

Contact Person: Dr Rajkumar Halder

Stall ID: 06-175-G-S

Category of Innovation: Transport Medium>>06. Sample, Sample Collection, Drugs Consumables and Logistics



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ANNEXURES



Annexure I

Agenda Day 1

Time	Title	Speaker
08:00 - 09:00	Welcome and Registration	
L2 Audi-II, Bharat Mandapam Convention Centre		
09:15 - 10:15	Inauguration	Welcome: Smt. Anu Nagar JS, DHR Opening Remarks: Dr. Rajiv Bahl, Secretary DHR & DG-ICMR Address - Dr. Trevor Mundel, President, Global Health, Gates Foundation - Dr. V. K Paul, Member NITI Aayog Chief Guest: Smt. Anupriya Singh Patel, Hon'ble Minister of State, MoHFW Vote of Thanks: Ms. Manisha Saxena, Sr DDG (Admin), ICMR Moderator: Dr Nivedita Gupta, Head Communicable Diseases, ICMR
10:20 - 10:40	Lecture Subclinical TB - Innovations to detect and its implications to achieve End TB targets	Dr. Soumya Swaminathan (Former Chief Scientist, WHO & Chairperson MSSRF) Moderator: Dr. Urvashi B Singh (DDG TB)
10:40 - 11:00	Lecture Innovations in TB Diagnosis	Prof. Gagandeep Kang (Gates Foundation) Moderator: Dr. Cassandra Kelly-Cirino (The Union)
Break		
11:15 - 12:00	Panel Discussion Journey to TB Elimination- Where do we need more innovations?	- Dr. Soumya Swaminathan - Prof. Guy Marks (The Union) - Dr. Urvashi Singh (DDG TB) - Dr. Madhukar Pai (McGill University) - Dr. Suman Rijal (WHO SEARO) - Dr. Jacob John (Rtd. Professor, CMC Vellore) - Chapal Mehra, (Director Pi Consulting) Moderator: Dr Rakesh PS
12:00 – 12:55	Round Table Commitment to Innovate towards Ending TB	- Dr. V.K Paul (NITI Aayog) - Dr. Rajiv Bahl, Secretary DHR & DG-ICMR - Mrs. Aradhana Patnaik (AS-MD) - Dr Roderico H Ofrin (WR, India) - Dr. Rajeev Singh Raghuvanshi (DCGI) - Dr. Dinesh Arora (ADB), Principal Health Specialist - Dr. Trevor Mundel, President, Global Health, Gates Foundation - Mr. Madhav Joshi CEO, India Health Fund Moderator: Dr Nivedita Gupta, Head Communicable Diseases, ICMR
12:55 - 13:15	Lecture Innovations in improving access to TB care	Dr. Sreenivas A Nair (STOP TB Partnership) Moderator: Dr VK Chadha

Annexure I

Agenda Day 1

13:15 - 14:00	Panel Discussion Innovations in Public Private Partnership for Ending TB	• Dr. K.K. Tripathy (MoHFW) • Maj Gen (Prof) Atul Kotwal (NHSRC) • Dr Mohammed Yassin (Global Fund) • Dr. Cassandra Kelly-Cirino (The Union) • Dr. Ajay Tandon (World Bank) • Dr. Jyoti Logani (DBT) Moderator: Dr Shibu Balakrishnan
Break		
14:30 - 15: 30	Round Table People's Movement against TB - Innovations in community engagement	• Dr. Nishant Kumar (CTD) • Ms. Blessina Kumar (GCTA) • Dr. Sairu Philip (STF Kerala) • Ms. Anisha Singh (Union) • Mr. Mohan H.L (KHPT) • Ms. Richa Sharma (Women's Collective Forum) • Dr. Ramya Ananthakrishnan (REACH) Moderator: Ms. Kamalini Mukhopadhyaya
15:30 - 15:45	Lecture Opportunities in Government departments for innovators	Dr. Suchita Markan (ICMR)
15.45 - 16.00	Lecture Opportunities available for innovation under PRIP scheme	Dr. Richa Pandey, Director, Dept of Academic & Research Division, Dept of Pharmaceuticals, Gol

Parallel Sessions		
	L1 meeting room No- 19	L1 meeting room No- 15
14:30 - 15:10	Panel Discussion Can we make TB treatment short and safe? • Dr Sanjay Kumar Mattoo (CTD) • Dr. Anuj Bhatnagar (RBIPMT) • Dr. Narendran Gopalan (NIRT) • Mr. Sandeep Juneja (TB Alliance) • Dr. Sangeeta Sharma (IHBAS) • Dr. Vijaya Lakshmi Valluri (BMMRC) • Dr. Madhur Gupta(WHO) Moderator: Dr Sanjeev Nair	Lecture Innovations without access is not really an innovation Dr. Madhukar Pai (McGill University) Moderator: Dr. Ranjani Ramachandran (WHO India)
15:10 - 15:50	Panel Discussion Adherence and Patient support • Dr Sanjay Kumar Mattoo (CTD) • Dr. Somashekar. N (NTI) • Dr. Shailendra Bhatnagar (STO UP) • Dr. Sameer Kumta (Gates Foundation) • Dr. Nusrat Shafiq (PGI Chandigarh) • Mr. Ganesh Acharya (TB Survivor) • Dr. Onali Rajapakse (Sri Lanka) Moderator: Dr Karikalan N	Panel Discussion Future of Artificial Intelligence in TB Elimination • Dr. KiranKumar Rade (STOP TB Partnership) • Ms. Nidhi Bansal (The Union) • Dr. Shibu Vijayan (Qure Ai) • Dr. Aparna Chaudhary(Wadhwani AI) • Dr. Ajit Patil (DeepTek) Moderator: Dr Manu Mathew
Break		

Annexure I

Agenda Day 1

16:10 - 16:50	Panel Discussion Airborne Infection Control- Are there any magic bullets? • Dr. Atul Mohan Kochhar (NABH) • Dr. Sanjeev K. Singh (Amrita Faridabad) • Dr. Sarabjit Chadha (FIND) • Dr. Malik M Parmar (WHO India) Moderator: Dr. D Parija	Round table Using Information for Decision Making - How to improve efficiency? • Dr. Raghuram Rao (MoHFW) • Dr. KiranKumar Rade (Stop TB Partnership) • Dr. Govindan Rangarajan (IISC) • Dr. Shamim Mannan (WJCF) • Dr Bhavin Vadera (Public Health Expert) • Dr. Deepak Balasubramanian (PATH) • Dr. Hitesh Verma (STO-Haryana) Moderator: Dr Hemant D Shewade
16:50 - 17:30	Panel Discussion Innovations in Multi-Sectoral Engagement • Dr. Bhawani Singh Kushwaha (MoHFW) • Dr. Jyoti Jaju (The Union) • Dr. Shibu Balakrishnan (WHO India) • Dr. Upasana Arora (Yashodha Hospital) • Dr. Sandeep Sharma (IOCL) • Mr. Charudutta Panigrahi (FIDR) Moderator: Mr. Mohd Shadab	Round table Innovations in Capacity Building • Dr. Arun Kumar Jha (Former EA) • Dr. Dharmendra Kumar Yadav (NIHFW) • Dr. Vinay Garg (CTD) • Dr. Manu Mathew (The Union) • Dr. Parija (JHPIEGO) • Dr. Sanjeev Lavania (STDC-Agra) Moderator: Dr. Abhimanyu Singh

Annexure I

Agenda Day 2

Time	L1 Meeting Room No- 19	L1 Meeting Room No -15
09:30-10:10	Round Table Operational innovations in Community wide screening - Prof. Guy Marks (The Union) - Dr. Sonali Sarkar (REPORT Consortium) - Dr. Vineet Bhatia (WHO SEARO) - Dr. Amar Shah (Public Health Expert) Moderator: Dr. Shamim Mannan	Round table Next Generation Sequencing - Can it solve the problems with the current diagnostics? - Prof Urvashi B Singh (DDG-TB) - Dr. Rupak Singla (NITRD) - Dr. Siva Kumar (NIRT) - Dr. Camilla Rodrigues (Hinduja) - Dr. Sanjeev Nair (ZTF) - Dr. Debasish Mohanty (NII) - Dr. Ameeta Joshi (JJ Hospital) Moderator: Dr. Uma Devi
10:10-10:50	Round Table From bench to programmatic scale - Dr. Ranga Chandrashekar, (Joint DCGI) - Dr. Raghu Dharmaraju (ARTPARK) - Mr. Sandeep Juneja (TB Alliance) - Dr. Kavita Rajshekhar (DHR-ICMR) - Ms. Archita Chaudhary (IHF) Moderator: Dr. Leyanna Susan George	Panel discussion Catalysing Pediatric TB innovations - Dr. Varinder Singh (Lady Hardinge Medical College) - Dr. Sangeeta Sharma (NITRD) - Dr. Aishwarya. V (NIRT) - Dr. Nilesh Saini (STO Delhi) - Dr. Sathish Kumar (SAATHI) - Dr. Sushant Mane (JJ Hospital) Moderator: Dr. Balaji R
Break		
11:00-11:40	Panel discussion Point of care Vs centralized testing- What is most suitable for India? - Dr. Nishant Kumar (MoHFW) - Dr. Amita Jain (KGMU) - Dr. Sriram Natrajan (Molbio) - Dr. Shesheer Kumar (Huwel Diagnostics) - Dr. Ameeta Joshi (Sir JJ Hospital) - Dr. Gautam R. Wankhede (My Lab) Moderators: Dr. Siddharth Giri/ Dr. Madhumathi J	Round Table Resources for R&D in diagnostics - Dr. Hanna Luke (NIRT) - Dr. Sarabjit Chadda (FIND) - Dr. Joy Sarojini M (Gates Foundation) - Dr. Manpreet Bhalla (NITRD) - Dr. Prabha Desikan (BMHRC) - Dr. Phurpa Tenzin (Director Public Health, Bhutan) Moderator: Dr. Neeta Singla

Annexure I

Agenda Day 2

11:40-12:20	Panel discussion Sample collection & Transportation- Need for Innovations • Dr. Ranjani Ramachandran (WHO India) • Dr Sachin Gupta (PATH) • Dr. Naveen Shah (Nepal) • Ms. Amy Steadman (GH Labs) • Dr. Bharati Kalottee (The Union) Moderator: Dr. Sriram Selvaraju	Panel discussion Strengthening the Private Health System for ensuring STCI • Dr. Bhawani Singh Kushwaha (CTD) • Dr. Vijayasree Yellappa (KNCV) • Dr. Sunil Khetrapal (AHPI) • Dr. Artawan Eka Putra (Indonesia), • Dr. Narin Sehgal (Sehgal Neo) • Dr. Anand Jaiswal (Medanta) Moderator: Dr. Rakesh PS
12:20-13:00		Panel discussion Care beyond medical management of TB (Pulmonary Rehabilitation, Palliative Care) - live • Dr. Sanjay Kumar Mattoo (CTD, MoHFW) • Dr. Rajam Iyyer (Hinduja Hospital) • Dr. Rajani Bhat (Sparsh Hospital, Bengaluru) • Dr. Sanjeev Nair (GMC Trivandrum) • Dr. Vishal Bansal (Vallabhbhai Patel Chest Institute) • Dr. P.M Ramesh (GHTM Tambaram) Moderator: Dr Meera Bhatia
13:00-13:30	Valedictory Session	

Annexure II

Rapporteurs & Coordinators

Session Time	Session Name	Major Rapporteurs Assigned
10:50-11:35	Round Table: Commitment to Innovate towards Ending TB	• Dr. Vignes Anand (Medical scientist, NIRT) • Ms. Bhavya (Social scientist Sci- B, NIRCH, Mumbai) • Coordination: Heena (The Union)
12:05-12:50	Panel Discussion: Journey to TB Elimination- Where do we need more innovations?	• Dr. Falguni Debnath, (Scientist-E, Medical scientist, NIRBI, Kolkata) • Dr. Jyotirmayee Turuk, (Sci-D, Microbiologist, RMRC, Bhubaneshwar) • Coordination: Dr. Aravind (The Union)
13:10-13:45	Panel Discussion: Innovations in Health financing for Ending TB	• Dr. Muhammed Jabir, (Sci-B, Epidemiology and Operational Research, VCRC, Puducherry) • Dr. Reetika Malik Yadav, (Sci-D, Immunology, public health, NIIH, Mumbai) • Coordination: Midhun (The Union)
14:30-15: 30	Round Table: People's Movement against TB - Innovations in community engagement	• Mr. Nithin Rajamani, (Sci- B, Social Scientist, NIIH, Mumbai) • Dr. Vidhan Jain, (Sci-D, Tribal health, NIRTH, Jabalpur) • Coordination: Meera (The Union)
14:30-15:10	Panel Discussion: Can we make TB treatment further short and safe?	• Dr. Jyotirmayee Turuk, (Sci-D, Microbiologist, RMRC, Bhubaneshwar) • Dr. Nancy Hilda (Organizing Team, Immunology, NIRT, Chennai) • Coordination: Sristi (The Union)
15:10-15:50	Panel Discussion: Adherence and Patient support	• Dr. Vishal Deo (Digital Health and Data Science, NIRDH & DS NIMS) • Dr. Garima Jain (Medical scientist, NIRDH & DS , NIMS) • Coordination: Kamalini (The Union)
15:10-15:50	Panel Discussion: Future of Artificial Intelligence in TB Elimination	• Dr. Nazneen Arif, (Sci-D, Medical scientist, NICPR, Noida) • Dr. Rehnuma Parvez, (Sci-E, Medical scientist, RMRC, Portblair) • Coordination: Awele (The Union)
16:10-16:50	Panel Discussion: Airborne Infection Control- Are there any magic bullets?	• Dr. Reetika Malik Yadav, (Sci-D, Immunology, public health, NIIH, Mumbai) • Dr Gaurav Raj Dwivedi, (Sci-D, Lab scientist, RMRC, Gorakhpur) • Coordination: Kamalini (The Union)

Annexure II

Rapporteurs & Coordinators

16.10-16.50	Round Table: Using Information for Decision Making - How to improve efficiency?	• Dr. Ramesh Kumar Huda, (Sci-C, Data Management & Analysis Machine Learning, NIIRNCD, Jodhpur) • P.Thangsuanhau, (Sci- B., Social scientist, RMRC, Dibrugarh) • Coordination: Arvind (The Union)
16.50-17:30	Panel Discussion: Innovations in Multi-Sectoral Engagement	• Dr. Dasi Teena, (Sci-C, nutrition, health, NIN, Hyderabad) • Dr. Kiran Munne, (Sci – C, Medical scientist, NIRRCH, Mumbai) • Coordination: Srishti (The Union)
16.50-17:30	Round Table: Innovations in Capacity Building	• Dr. Sampada Bangar, (Sci-E, Public health, NITVAR NARI, Pune) • Dr. N. Muruganandam, Sci-E, Lab scientist, RMRC, Portblair • Coordination: Midhun (The Union)
09.30-10:10	Round Table: Operational innovations in Community wide screening	• Dr. Lalit Kumar, Specialist Grade-I, Dept. of Pulmonary Medicine, BMHRC, Bhopal, Medical scientist, BMHRC, Bhopal • Dr. K. Venkatesh, Sci-E, nutrition, health, NIN, Hyderabad • Coordination: Awele (The Union)
09.30-10:10	Round Table: Next Generation Sequencing - Can it solve the problems with the current diagnostics?	• Dr. Kunal Pise, (Sci-E, Lab scientist, NIV, Pune) • Dr. N. Muruganandam, (Sci-E, Lab scientist, RMRC, Portblair) • Coordination: Meera (The Union)
10.10-10.50	Round Table: From bench to programmatic scale	• Dr. Kuldeep Singh, (Sci -C, Lab scientist, NIMR, New Delhi) • Dr. Falguni Debnath, (Scientist-E, Medical scientist, NIRBI, Kolkata) • Coordination: Kamalini (The Union)
10.10-10.50	Panel Discussion: Catalysing Pediatric TB innovations	• Dr. Azger (Lab scientist, NIRT) • Dr. Nitish Tank, (Sci-D, Pharmacology, NIOH, Ahmedabad) • Coordination: Heena (The Union)
11.00-11.40	Panel Discussion: Point of care Vs centralized testing- What is most suitable for India?	• Ms. Bhavya, (Sci- B, NIRRCH, Mumbai) • Dr. Vignes Anand (Medical scientist, NIRT) • Coordination: Kamalini (The Union)

Annexure II

Rapporteurs & Coordinators

11.00-11.40	Round Table: Resources for R&D in diagnostics	• Dr. Nazneen Arif, (Sci-D, Medical scientist, NICPR, Noida) • Dr. Sampada Bangar, (Sci-E, Public health, NITVAR NARI, Pune) • Coordination: Awele (The Union)
11.40-12.20	Panel Discussion: Sample collection & Transportation- Need for innovations	• P.Thangsuanhau, (Sci- B., Social scientist, RMRC, Dibrugarh) • Dr. Kuldeep Singh, (Sci -C, Lab scientist, NIMR, New Delhi) • Coordination: Heena, (The Union)
11.40-12.20	Panel Discussion: Strengthening the Private Health System for ensuring STCI	• Dr. Garima Jain (Medical scientist, NIRDH & DS NIMS) • Coordination: Sristi (The Union)
12.20-13.00	Panel discussion: Care beyond medical management of TB (Pulmonary Rehabilitation, Palliative Care)	• Dr. Nancy Hilda, (Immunology, NIRT, Chennai) • Dr Gaurav Raj Dwivedi, Sci-D (Lab scientist, RMRC, Gorakhpur) • Coordination: Meera (The Union)

The organizing team acknowledges the esteemed patronage of Dr. Rajiv Bahl, DG ICMR and Secretary DHR, Smt Anu Nagar, JS-DHR

Organizing Team

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INDIA innovation Summit

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