



CRUSADE FOR TB

Bringing Treatment to Masses at their Doorsteps

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Gandhiji said that India lives in its villages. This is largely true even to this day. It is of paramount importance that this large population needs to be happy and for that they need to maintain good health.

Having a robust health system in the villages is a necessity to achieve the above. To this end, the National Rural Health Mission (NRHM) was launched in 2005, to provide accessible, affordable and quality healthcare to the rural population. The thrust of the mission is on establishing a fully functional, community-owned, decentralized health delivery system with intersectoral convergence at all levels, to ensure simultaneous action on a wide range of determinants of health such as water, sanitation, education, nutrition, social and gender equality. The goal of the Mission is to improve the availability of and access to quality healthcare for people residing in rural areas. A key feature of the Mission is the involvement of Panchayati Raj institutions, thereby empowering the local population to have a say in deciding and monitoring the public health services in their area.

Tuberculosis features as one of the major rural health issues along with undernutrition, each negatively impacting the other. According to the Report of the Joint TB Monitoring Mission, India, 2015, the prevalence

of TB is higher in rural regions compared to urban areas in different settings across India. There could be several reasons, chief of which would be ignorance of the disease and its spread amongst the population and access to healthcare. The Rural Health Mission seeks to alleviate this problem by involvement of ASHA (Accredited Social Health Activists – persons from the local community who are trained in TB-related activities among many other health-related issues) in the Revised National TB-Control Programme.

Gandhiji dwelt on cleanliness and good habits and pointed out its close relationship to good health. He made cleanliness and sanitation an integral part of the Gandhian way of living. Cleanliness is the most important for physical well-being and a healthy environment. It has bearing on public and personal hygiene. This has particular relevance to TB where the practice of cough hygiene along with safe sputum disposal will go a long way in preventing disease transmission.

Gandhiji also believed in the use of media to create awareness on cleanliness. The same ideology is being employed for TB control by creating awareness about the disease, its cause, spread and the availability of free diagnostic and treatment facilities. This has been particularly achieved through the use of popular

TUBERCULOSIS: A Battle yet to win

Elimination Target: 2025

- Implementation Body: Revised National Tuberculosis Control. Program (RNTCP)
- Current Situation: 211 new cases per 100,000 population (2016)

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- From sanitarium-based approach to effective domiciliary treatment
- Validation of DOTS
- Shortening of HIV-TB treatment
- Mobile Vans for TB diagnosis in tribal populations
- TruNAT Molecular Diagnostics: cost-efficient, sensitive, specific, PHC friendly
- Introduction of new technologies from drugs to vaccine to molecular diagnostics

public personalities. Additional direct interaction with community for building awareness about the disease is through Advocacy, Communication and Social Mobilization (ACSM). Thus we see the use of Gandhian ideas in TB control in rural areas.

The National Institute for Research in Tuberculosis continues to work along with the National TB Programme towards generating evidence for improving the diagnosis, treatment and prevention of TB with special focus on rural areas. The above contributions of the Institute are aligned with the End TB strategy of WHO and the Indian National Strategic Plan for ending TB.

TB has existed in India for several thousand years though even at the beginning of the 19th century it was believed that there were hardly any instances of TB in India. Only after various clinicians reported otherwise did the authorities start to accept that TB was a major problem in India. It has been mentioned in a paper

published in 1909 in the British Medical Journal that Major L. Rogers conducted an analysis of post mortem records from the past 26 years and confirmed that no less than 17 per cent of deaths were directly due to TB while 8 per cent more showed latent TB in the lungs. In fact it has been acknowledged in the same paper that TB is a far greater scourge in India than dreadful diseases like cholera, small pox and dysentery.

Before the major historical landmark discovery of the Tubercle bacillus by Robert Koch, the disease was treated in the name of “phthisis” or “consumption” with a variety of herbal concoctions, dietary intervention and climatic prescriptions. Bleeding and purging were also a part of treatment methods, which amplified and accelerated the mortality. Subsequently, with the discovery of drugs for infection, important global strides in TB therapy like the use of Streptomycin and PAS took place, and Indian TB research also followed closely. One of the landmarks in TB research was the establishment of the Tuberculosis Chemotherapy Centre in Chennai, which is now known as National Institute for Research in Tuberculosis.

The ICMR-National Institute for Research in Tuberculosis is a flagship institute of the Indian Council of Medical Research mandated to provide scientific understanding and technologies needed to support the fight against TB. It is recognized as a WHO collaborating centre for TB research and training and also as a supranational reference laboratory for mycobacteriology for South-East Asian countries under WHO. When the Institute was established in 1956, the management of tuberculosis was restricted to treatment in a sanatorium. The Institute revolutionized the treatment of TB by establishing the evidence in favour of domiciliary (home-based) treatment. The Institute has also helped to establish the principles of TB treatment by drugs by including a short-course chemotherapy.

NIRT has been at the forefront of evaluating newer diagnostic tools and translating it into policy for introduction in the programme. Based on these policy changes, rural areas of India have increased access to TB diagnostic tools, thereby decreasing the turn around time for diagnosis of both drug-sensitive and drug-resistant TB.

The research contributions of ICMR-NIRT have played a crucial role in the formulation of Directly

Observed Treatment Short-course (DOTS) strategy for TB control globally and for policy framework of RNTCP, improving the efficacy of treating TB patients at home without additional risk to close family contacts, a short-course chemotherapy for both pulmonary and extra-pulmonary forms of TB, need for DOT and decentralization of anti-TB treatment. The BCG TB prevention trial was a landmark study involving 260,000 individuals in a rural setting. The study showed that BCG offered no protection in adults and a low level of overall protection in children.

In the last 60 years at NIRT, more than 100,000 TB patients have been screened and 15,000 patients enrolled to various clinical trials. So far, more than 35 clinical trials for treatment of various forms of TB (including TB lungs, TB spine, TB meningitis, TB lymphadenitis, TB abdomen and TB skin) have been carried out at NIRT in collaboration with various Institutes. Intensive research has been carried out in the area of HIV-TB as well as drug resistant TB.

Realizing the need for newer and more strategic approach for TB control, ICMR has set up the India TB Research Consortium. It aims to bring together all major national and international stakeholders to develop new tools (drug, diagnostics and vaccines) for TB. It is functioning on a mission mode towards translating and delivering new and effective TB diagnostics, new and shorter-drug regimens, effective vaccines and immunotherapies for TB, and strengthening scientific capabilities in the country. A number of trials have been initiated for testing the efficacy of new TB drugs and vaccines. Recently, TruNAT Rif, an indigenous, cost effective, rapid molecular diagnostic kit for TB/MDR-TB has been developed, validated and recommended for roll out under RNTCP at Primary Health Centres (DMCs) in a phased manner. Also, newer steps for finding active missing cases in tribal populations in remote areas through mobile X-ray vans is being undertaken. ICMR is continuously addressing the problem of TB with greater vigour than ever with an aim to arrest TB by 2025.

GOVERNMENT HOSPITAL OF THORACIC MEDICINE, TAMBARAM

The legacy of contributions of the Government Hospital of Thoracic Medicine, commonly referred to as ‘Tambaram sanatorium’, a vital collaborator for



Supervised TB treatment in the field.



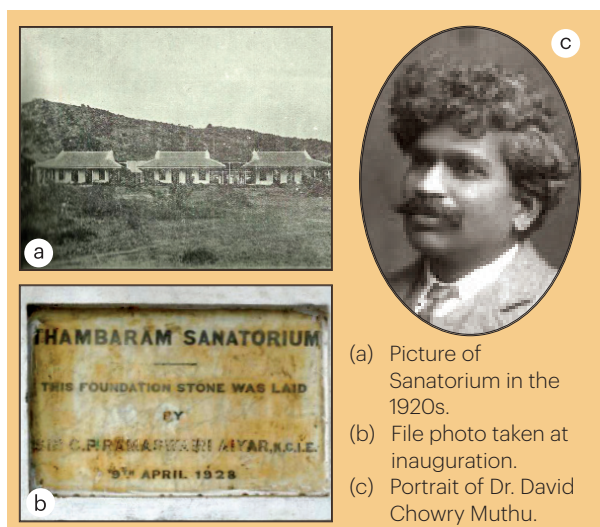
Census taking in a rural setting in Tamil Nadu.



BCG scar inspection in the field.

nearly 9 decades, deserves special mention, when NIRT trials are illustrated.

Dr. David Chowry Muthu, a physician specialized in tuberculosis care from the Mendip Hills sanatorium, Wells UK, visited India in the 1920s. He found the problem of tuberculosis extending from villages to towns, involving the middle and working classes to contract the disease. They progressively deteriorated, ending fatally. One of his high profile patients was Srinivasa Ramanujan, the renowned



(a) Picture of Sanatorium in the 1920s.
 (b) File photo taken at inauguration.
 (c) Portrait of Dr. David Chowry Muthu.



A view of the ward with plenty of vegetation, supplying fresh air and sunlight for TB patients.

Indian mathematician. Dr. Chowry Muthu, inspired and influenced by Mahatma Gandhiji's thoughts, began spending increasing amounts of time in India, treating patients with TB. Eventually, in an era when BCG was unknown, with no treatment available, he hit upon the idea of starting a sanatorium that could sequester patients and offer open surroundings with enough cross ventilation and plenty of sunlight, the only modality of treatment available at that time for these tuberculosis patients. For this purpose, he acquired 250 acres of land at the base of Pachamalai hills in Tambaram and ultimately established the TB sanatorium (currently called the Government Hospital of Thoracic Medicine) with 12 beds, inaugurated by Sir. C.P. Ramaswami Aiyer on April 9, 1928.

This sanatorium set up by Dr. David Chowry Muthu blossomed into one of the largest hospitals for TB in South-East Asia and has always remained an inseparable partner in almost all studies conducted by



ICMR-National Institute for Research in Tuberculosis, Chennai.

TRC-ICMR starting from the very first 'home' versus 'sanatorium' study in the 1950s till the confirmation of daily regimen to be superior in HIV-TB (the only global evidence available in the clinical trial format) conducted in 2008. The TB sanatorium at Tambaram – shouldering clinical responsibility, hand in hand, offering crucial assistance for in-patient management for nearly 9 decades, considering and satisfying the critical and vital requirements in treating trial participants – has helped in the progress of almost all TRC-ICMR studies. The concern and consideration for TB patients in general by the sanatorium staff is worth-mentioning, considering the risk of transmission while dealing with this dreadful disease, a stigma even in this modern era among the community. The well-ventilated wards welcoming the much needed rays of the sun, surrounded by blooming trees and chirping birds, create a perfect ambience for these ailing TB patients, helping in faster recovery. No wonder the TB sanatorium has gained importance as a pinnacle educational centre for excellence in HIV and TB treatment, currently catering to nearly 2 lakh patients annually, with an in-patient capacity of 760 beds; it also performs the role of an academic institute for training medical and paramedical students in their never-ending efforts towards the End TB Strategy.

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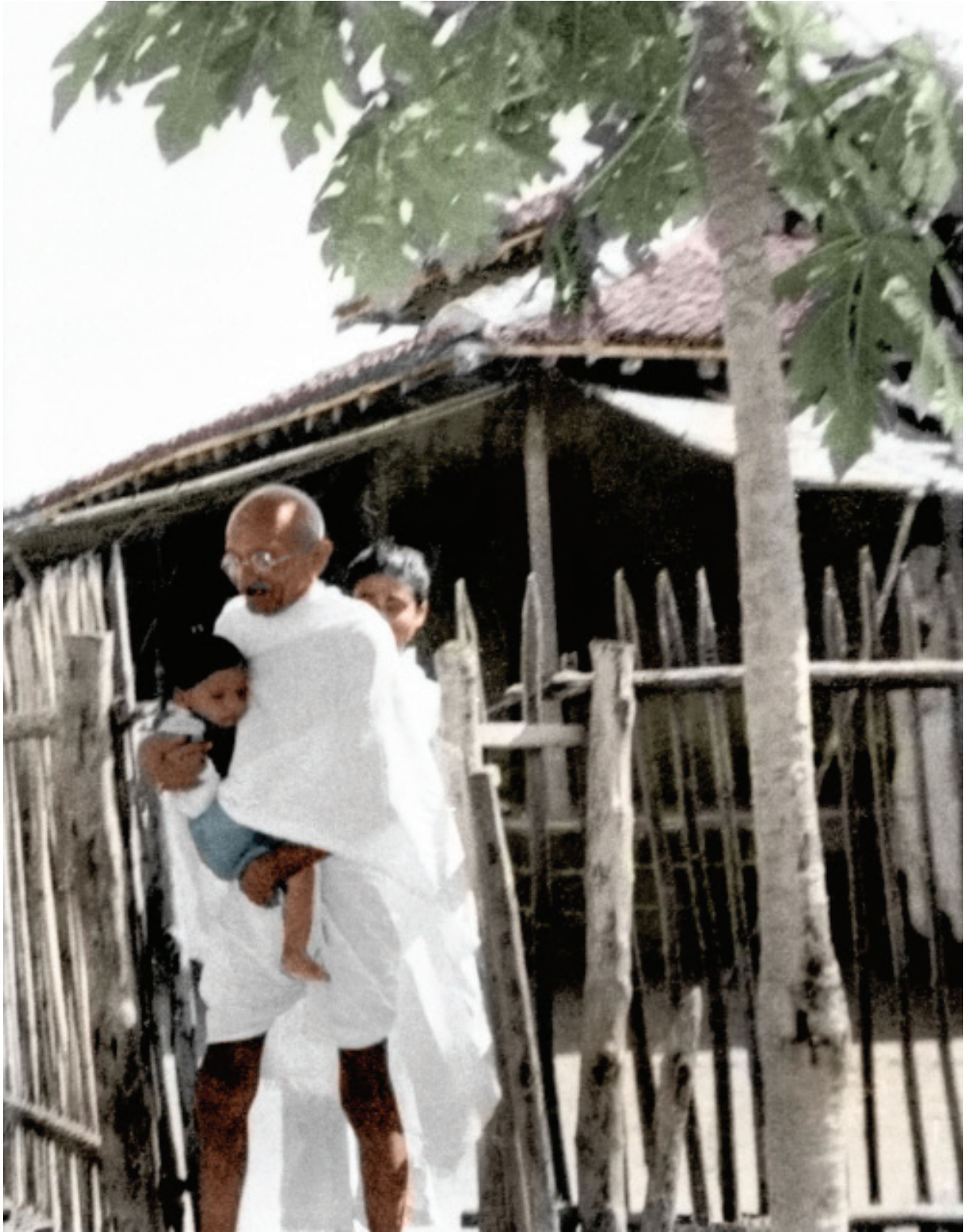
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Mahatma Gandhi carrying Shardabehn's child at Sevagram Ashram, 1940.