



## IMPACT REPORT

# COMPREHENSIVE FAMILY-CENTRED NUTRITION INTERVENTION FOR PEOPLE WITH TB

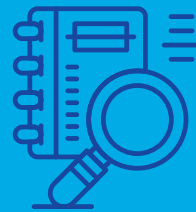
July 2024 - December 2025



# Context

The complex dynamics between tuberculosis (TB) and nutritional status, particularly among disadvantaged and vulnerable populations, is well established: poor nutrition weakens an individual's immune response to TB and their tolerance of TB treatment; and TB causes wasting and reduced metabolic function among those affected. Numerous studies have found an inverse relationship between body mass index (BMI) and risk of tuberculosis - those who are malnourished are more likely to contract TB, and malnourishment is also associated with poor treatment outcomes. Studies have shown that an estimated 55% of TB incidence in India (or more than one million new cases annually) is attributable to the effect of undernutrition, which is significantly greater than those attributable to any other risk factors including HIV, diabetes, or smoking. Addressing nutritional status during TB treatment is essential to improving outcomes and long-term health and well-being.

**To address the dual burden of TB and undernutrition, REACH implemented the Comprehensive Family-Centred Nutrition Intervention for People with TB, with support from Hindustan Unilever Limited in three districts of India: Haridwar in Uttarakhand, Patiala in Punjab, and East Godavari in Andhra Pradesh. This intervention was designed to complement the National TB Elimination Programme's existing nutrition strategies, including the Ni-kshay Poshan Yojana scheme and the Ni-kshay Mitra initiative.**

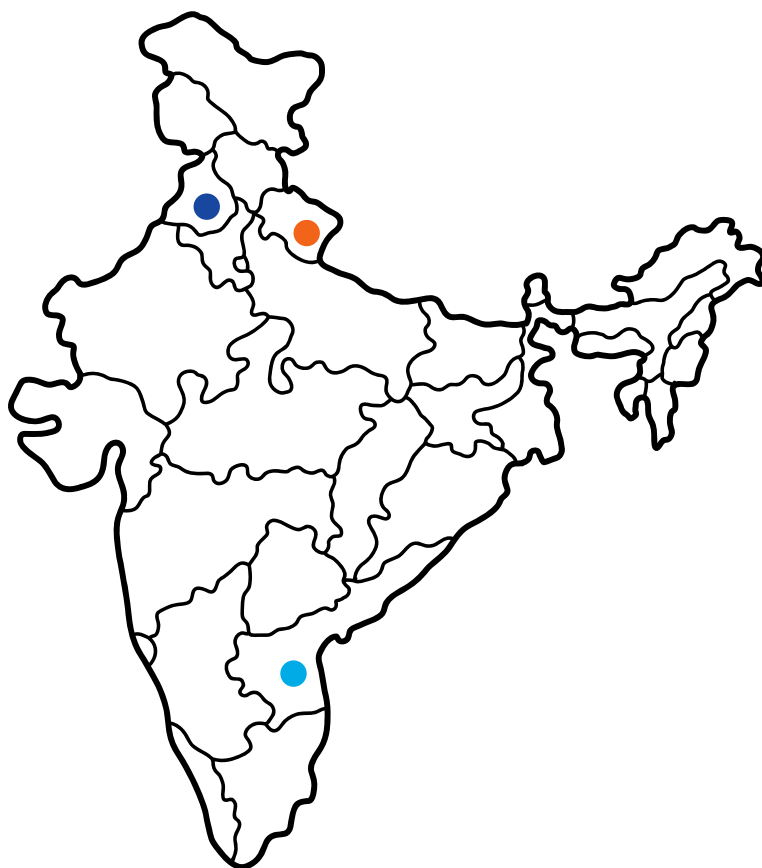


## Objectives

- To design and roll out a comprehensive, family-centred nutrition intervention for people with TB in three districts of India to address the dual burden of TB and malnutrition
- To provide additional nutritional support for people with TB based on the needs assessment
- To provide comprehensive family-centred counselling to people with TB and their caregivers

# Project Setting

The project was initiated across the three districts ( Haridwar, Patiala and East Godavari) in July 2024, with meetings with the State TB Officers and senior health officials. Based on discussions with the NTEP, **21 TB units** across the three districts were selected for the intervention.



TB Units covered across 3 districts		
Haridwar	Patiala	East Godavari
Bahadrabad	Bhadson	Anaparthi
Bhagwanpur	Kallo Majra	Dowleswaram
Haridwar	Kauli	Kadiyam
Laksar	Shatrana	Kanuru
Narsan	Patiala	Korukonda
Roorkee	Dudhan Sadha	Malakapalli
	Harpalpur	Nidadavolu
		Rajahmahendravaram (Rajahmundry)

# Key Interventions

The project demonstrated a comprehensive and holistic approach to influence nutritional outcomes among people with TB. The interventions offered to people with TB and their families were a combination of:

## Person-centered Care

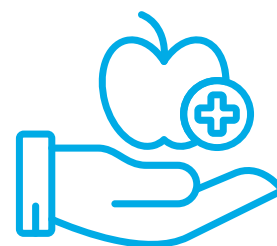
including Treatment Literacy, support for treatment adherence, and sensitisation of family caregivers



## Comprehensive nutrition support

including:

- vulnerability and nutrition assessment
- nutrition education by trained Community Health Workers(CHWs)
- expert counseling by nutritionists for those most vulnerable
- nutrition support group meetings at TUs for families



## Additional Nutrition Support (ANS) kits

to people with TB who were identified as particularly vulnerable



The Additional Nutrition Support Kits were designed in a participatory manner with NTEP and local communities to provide locally available and nutrient-dense foods that support overall recovery and well-being. Each kit included a balanced combination of items selected for their nutritional value and ease of use in daily meals- Roasted Channa (1/2kg), Dal (1kg), Jaggery (1/2kg), Soya bean (1/2kg), Peanuts (1/2kg), Mustard or Sunflower Oil (1 litre), and Dalia or Ragi (1kg). Ragi was given in Andhra Pradesh, while Dalia was preferred in Punjab and Uttarakhand.

# Key Results

**21**



Number of TB Units covered across 3 districts

**30**



Number of Community Health Workers (CHWs) trained and engaged

**4245**



Number of people with TB who received person-centred support from CHWs

**2614**



Number of people with TB with a BMI less than 18.5 supported through the project (61.6%)

**1008**



Number of people with TB provided Additional Nutrition Support through monthly food baskets

**1372**



Number of people with TB given nutritional advice by a nutritionist

**35**



Number of Nutrition Support Group Meetings conducted

**1151**



Number of people sensitised through Nutrition Support Group meetings

**478**



Number of community awareness meetings conducted

**9614**



Number of community members sensitized on TB and Nutrition

## Person-centred Care and Support to People with TB

Thirty Community Health Workers, many of whom were TB survivors and Champions themselves, were identified across three districts and trained to provide comprehensive person-centred care and nutrition support services. They were then engaged through the project and linked to specific facilities in their district. They received mentoring and participated in refresher training throughout the project period.



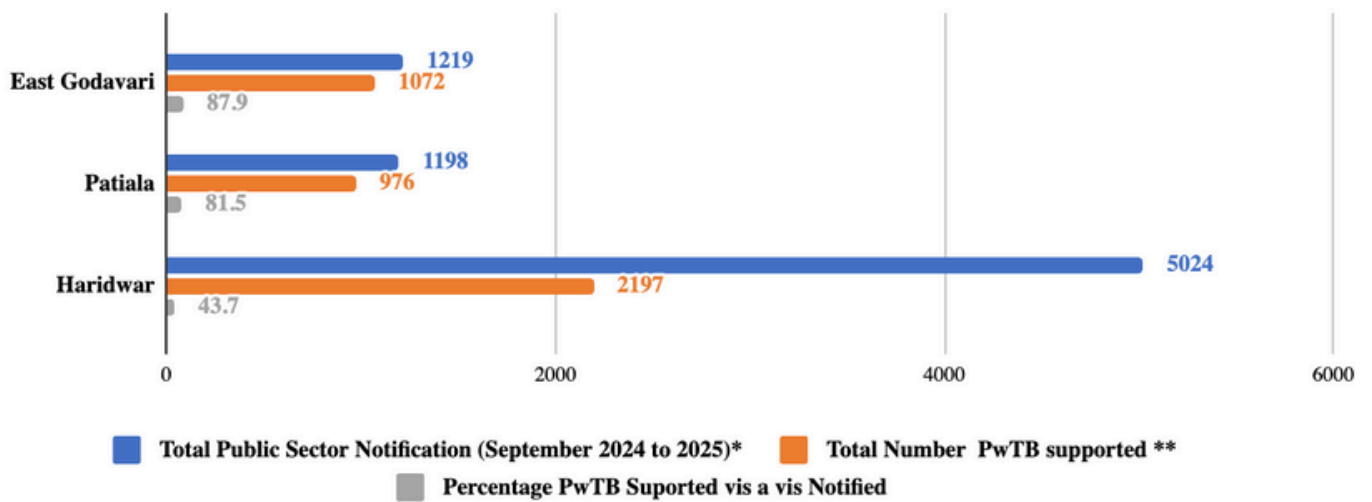
## Profile of People with TB who received Person-centred Care and Support

Indicators	n=4245	
<b>Total number of people with TB supported</b>	<b>4245</b>	
Male	2299	54.2%
Female	1945	45.8%
Transgender	1	0.02%
Pulmonary TB	3410	80.3%
Extrapulmonary TB	835	19.7%
People with drug-resistant TB	234	5.5%
Children (upto 14 years)	292	6.9%
Adolescents (15-17 years)	324	7.6%
People with TB and HIV	111	2.6%
People with TB and Diabetes	427	10%
People with TB with a BMI less than 14	465	10.9%
People with TB with a BMI between 14.1 and 18.5	2149	50.6%

The CHWs commenced field interventions in September 2024. The Public Sector reported a total of 7,441 TB notifications starting from September 2024. Of the total PwTB notified, 57% received support with person-centred care services through the project.

***Crucially, 61.6% of this supported group had a Body Mass Index (BMI) of less than 18.5***

## People with TB supported vis-a-vis notifications during project period



\*Based on Nikshay Register shared by the NTEP

\*\* In Haridwar, because of a high case load, people with drug-sensitive TB with a BMI less than 18.5 only were prioritised through the project



# Swati Chouhan

*Community Health Worker from Laksar TB Unit, Haridwar, Uttarakhand*

Swati played a key role in counselling people with TB at the Laksar TB Unit in Haridwar. She met many who were newly diagnosed, overwhelmed, and afraid of stigma. She always began with reassurance — that TB is treatable and recovery is possible, just as she had experienced herself.

Her approach centred on empathy and clear communication. Many people felt comfortable opening up to her because she had gone through similar challenges. This trust helped her explain the basics of TB in simple language, including pulmonary vs extrapulmonary TB, precautions at home, and common side effects. Several people who had stopped treatment even restarted their medicines after speaking with her. Swati also followed up regularly, guiding families on testing, adherence, and where to seek support.

A major part of her counselling focused on nutrition, which she sees as essential for recovery. She explained that TB medicines are strong and can cause acidity or nausea if taken without food. She encouraged simple, affordable meals like porridge, moong dal soup, boiled chickpeas, eggs, paneer, dals, green vegetables, soybeans, and fruits. She tailored advice to each person, identifying gaps in their diet and encouraging balanced, protein-rich meals.

Swati saw clear differences: those who improved their nutrition felt better within weeks, gained weight, and had less fatigue, while those who neglected it continued to feel weak despite regular treatment.

***‘TB can happen to anyone,’ she says, ‘but with the right treatment and good nutrition, anyone can get better, just like I did.’***



## Treatment Outcomes of People with TB Supported



Every person with TB supported by CHWs was followed up through a combination of telephonic counselling and in-person meetings to ensure treatment adherence and proper nutritional intake. By integrating regular counselling, follow-up, and community-based support, the project strengthened treatment adherence and contributed to better treatment outcomes for people with TB and drug-resistant TB.

**4245** 

PwTB supported by CHWs

**2128** 

individuals' treatment outcomes recorded on Ni-kshay\*

**2006** 

(94.3%) assigned a successful treatment outcome

\* As of December 8, 2025

## B.

# Additional Nutrition Support to People with TB

Nutrition support to augment the Ni-kshay Poshan Yojana was a key intervention aimed at addressing the nutritional vulnerabilities of people with TB. **In total, 13 TB Units across the three districts** (Patiala and Kauli in Patiala district; Roorkee, Bhagwanpur, and Laksar in Haridwar district; and all TB Units in East Godavari) were covered under ANS, ensuring focused support to improve treatment adherence, strengthen clinical outcomes, and complement national nutrition schemes. Eligibility criteria for ANS were defined in consultation with District TB Officers (DTOs) based on local needs and nutritional risk. Support was directed to a targeted subset of people with TB supported by CHWs.

The selection criteria for supporting people with TB with additional nutrition were: All PwDRTB, children with TB, people with drug-sensitive TB with BMI  $\leq 18.5$ , people with drug-sensitive TB with BMI  $\leq 15$ , reflecting severe undernutrition, people Living with HIV (PLHIV), and in two TB Units, a universal coverage approach was adopted, providing ANS to all people with TB supported by CHWs.

During the project period, a total of **1008** people with TB received monthly additional nutrition kits. In all, **4548** nutrition kits were distributed, including multiple kits to each person with TB throughout their treatment period. Of the total cohort of **4245** people with TB supported through the project, **23.7%** received additional nutrition kits.






## Profile of People with TB who received Additional Nutrition Support (ANS)


Indicators	n=1008	
Total Number of people with TB given Additional Nutrition Support (ANS)	1008	23.7%*
Male	511	50.7%**
Female	497	49.3%
Pulmonary TB	787	78.1%
Extrapulmonary TB	221	21.9%
Children (upto 14 years)	159	15.8%
Adolescents (15 -17 years)	156	15.5%
People with drug-resistant TB	144	14.3%

\*Of the total people with TB supported

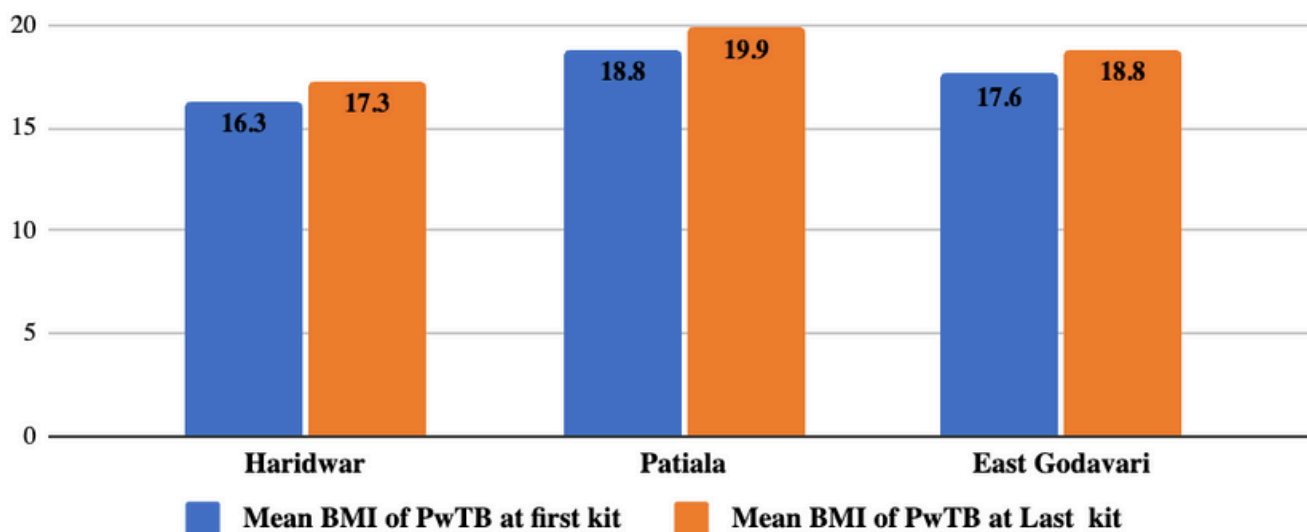
\*\*Of the total people with TB supported with ANS

**2128**   
individuals' treatment  
outcomes recorded on  
Ni-kshay\*

Of this, **584**   
treatment outcomes for  
the ANS cohort were  
recorded

Of 584 **556**   
(95%) assigned a  
successful treatment  
outcome

## Change in Mean BMI of People with TB given Additional Nutrition Support across three districts



**Haridwar:** n=400 (Of the total 493 PwTB given additional nutrition support, 93 were children)

**Patiala:** n=202 (Of the total 236 PwTB given additional nutrition support, 34 were children)

**East Godavari:** n=247 (Of the total 279 PwTB given additional nutrition support, 32 were children)

For operational reasons, people with TB received a varying number of kits (between 2 kits and 6 kits).

The additional nutrition support provided to people with TB over consecutive months, along with regular follow-up on nutrition counselling, has led to increased BMI across the three districts, underscoring the critical link between TB and nutrition.



## Anjali

### *A Journey of Recovery Through Timely Diagnosis, Nutrition Support, and Peer Support*

Anjali, a 26-year-old young woman from Patiala, worked as a caregiver for babies, earning on average ₹5,000 a month. In January 2025, she developed a painful node and felt unwell. Tests at the District Hospital confirmed extrapulmonary TB. Anjali felt weak constantly, and was unable to continue working. She lives with her mother and two siblings at her maternal grandmother's house.

In February, CHW Pardeep met Anjali for the first time and provided her with a first nutrition kit in March. Pardeep counselled her on the importance of eating small, frequent meals and taking her medicines properly at the right time. Between March and July, Anjali received five kits containing dalia, dal, chana, soya, oil, peanuts, and jaggery. These items strengthened her diet and supported the whole family, especially when salaries were delayed. A nutrition counsellor guided her on the phone on planning nutritious meals and using simple, healthy recipes.

The initial weeks were marked by weakness, vomiting, and weight loss. Over time, Anjali started gaining weight and energy. Anjali is appreciative of the organised monthly kit distribution, and feels this is important for all people with TB to recover from the disease.

Anjali's recovery highlights the value of timely diagnosis, immediate treatment, consistent nutrition support, and peer support through TB Champions/CHWs—an example of effective, person-centred TB care.

“

Over the years, Pardeep has supported more than 600 PwTB. For many, she is not just a health worker, she's a bridge between fear and recovery. *“I may not be highly educated,”* she says, *“but I know I've made a difference. That's what gives me peace.”*

## Qualitative Inputs from the Field

An assessment among people with TB receiving additional nutrition support was conducted across three districts to understand the effectiveness of the nutrition intervention. A total of 17 participants were interviewed. All participants had their TB treatment initiated at different time points between September 2024 and June 2025. Each had received additional nutrition kits ranging from three to four, along with person-centred care services from CHWs who supported them throughout their treatment journey.

The age of participants ranged from 11 to 58 years (median age = 34 years). Respondents included individuals working as daily labourers, printing press workers, agricultural labourers, and others engaged in informal work, as well as those not working, students, or dependent family members.

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### **Awareness and Knowledge on Nutrition**

All participants demonstrated a clear understanding of the importance of nutrition during TB treatment. Most emphasized that nutritious food strengthens the immune system, improves tolerance to TB medication, supports faster recovery, and helps prevent complications. Participants recalled that CHWs regularly counselled them on both treatment adherence and nutritional practices, which helped them overcome challenges related to taking medicines consistently.

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### **Perceived Health and Well-being Improvements**

Most participants reported significant improvements in their energy levels and ability to perform daily tasks. Some who had previously stopped working due to weakness reported that they had gradually resumed their regular work. While initial phases of treatment were characterized by significant fatigue, participants shared that adherence to the dietary guidance and regular consumption of food from the nutritional kits helped restore strength and improve overall functional capacity.

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### Usefulness of the Nutrition Kits

Participants found the nutritional kits extremely useful, particularly for families whose primary income source had been disrupted due to TB. They consistently reported that the kits helped them save money that would otherwise be spent on purchasing food items from the market, especially during periods of reduced or delayed income.

Several participants who had received the kits for over six months reported healthy weight gain, which they associated with successful treatment progress. Items such as channa, groundnuts, and dalia were especially appreciated for being easy to cook and energy-rich, with female participants highlighting their convenience and suitability for household cooking.



## Nutrition Support Group Meetings and Expert Nutrition Advice

**Nutrition Group Meetings** were an innovative intervention designed under the project to provide people with TB and their families access to credible, science-based nutrition information. These meetings created a unique platform for people with TB, their family caregivers, CHWs, and community stakeholders to interact and learn together.

For the first time, people with TB supported by CHWs and their caregivers participated in group sessions that covered practical topics such as balanced diets during treatment, locally available nutritious foods, and simple, affordable recipes suited to their recovery needs.

As part of a targeted intervention to improve nutritional outcomes among people with TB, **expert nutrition advice** was delivered via telephonic counselling. This initiative was specifically aimed at people with TB with low BMI and other vulnerabilities that increase the risk of poor treatment outcomes.

Each district had a dedicated Nutritionist who provided personalised counselling and communicated in the local language. Nutrition advice was delivered remotely to enable wider and timely reach. Nutritionists actively collaborated with CHWs, strengthening the continuum of care and supporting better follow-up and tracking of PwTB.

**35**



Number of Nutrition Support Group Meetings conducted

**1151**



Number sensitised in Nutrition Support Group meetings

**1372**



Number of people with TB given nutritional advice by Nutritionist

**287**



Number of people with TB followed up with additional nutritional advice by Nutritionist

## Bringing Nutrition Home

### *Interactive Nutrition Support Group Meetings*

Trained Community Health Workers in all three districts made nutrition counselling more engaging by conducting hands-on recipe demonstrations for people with TB and their families. In East Godavari, the REACH team, CHWs, along with Medical Officers, Anganwadi Workers, ASHA, and local leaders, use the meetings to emphasise the importance of good nutrition during TB treatment and created interactive spaces where participants could learn simple, affordable meal options using locally available ingredients.

Easy-to-prepare dishes such as ragi laddu with jaggery, ragi idli, ragi dosa, ragi kheer, and ragi papad were demonstrated, showing how nutrient-rich ragi can be incorporated into everyday diets. Participants were encouraged to taste the recipes, ask questions, and share their own ideas, making the sessions practical and relatable. These demonstrations have been well received by NTEP officials and widely appreciated by people with TB and their families. The initiative has helped households feel more confident in preparing nutritious meals at home, making nutrition counselling more meaningful and accessible across East Godavari.



D.

## Building community knowledge about TB-Nutrition



Community Health Workers organized community awareness meetings and met with stakeholders to promote TB awareness with emphasis on TB and Nutrition. **478** community awareness meetings were conducted in which **9614** community members were sensitized.



# World TB Day, 2025

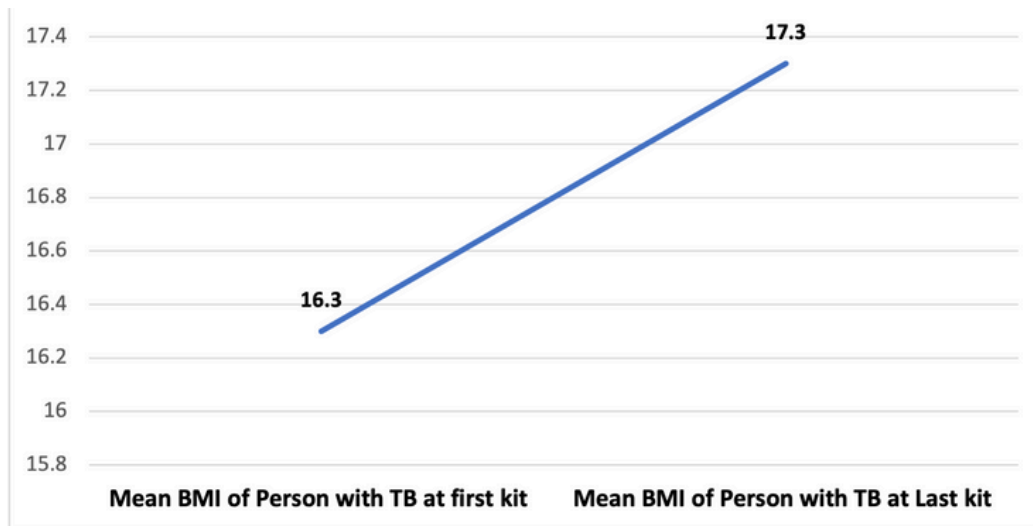




# District Haridwar

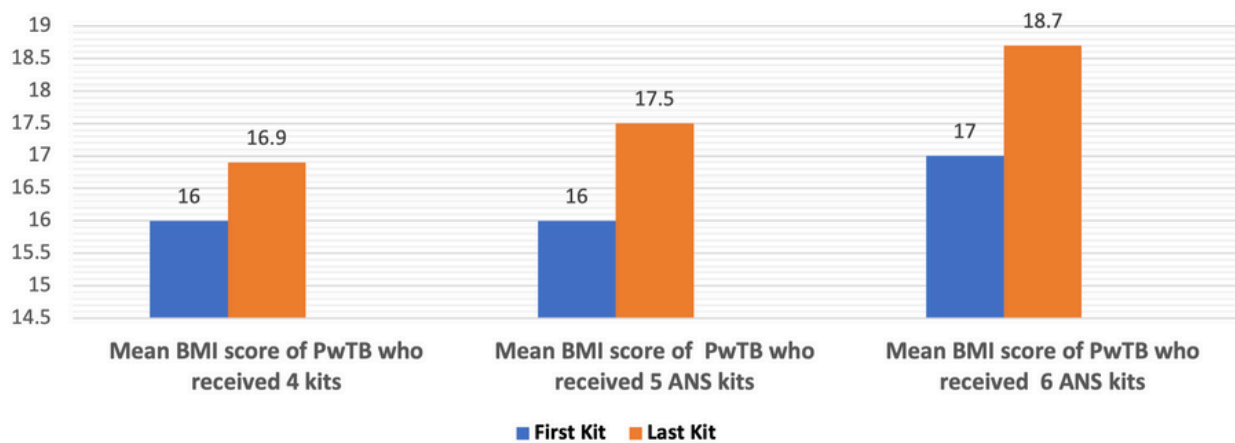
Number of TB Units covered	6
Number of Community Health Workers engaged	12
No of people with TB supported by CHWs with person-centred care services	2197
Of those supported, 1780 (81%) people with TB had a BMI less than 18.5	
Of those supported, 493 (22.4%) received additional nutrition kits in three TB Units of Roorkee, Bhagwanpur, and Laksar /Khanpur	
Total number of nutrition kits distributed	2110
Number of people with TB who received nutrition advice tailored to their specific vulnerabilities	586
14 Nutrition Support Group Meetings conducted with 312 people with TB and their families	
208 community awareness meetings conducted, sensitizing 4451 community members	
Number of people with TB for whom treatment outcomes were recorded on Ni-kshay	1292
Among those with outcomes, number of people with TB assigned a successful treatment outcome	1224 (94.7%)
Of the people with TB who received Additional Nutrition Support, treatment outcomes were recorded in Ni-kshay for 309 individuals. Among them, 302 (97.7%) were assigned a successful outcome.	

### Mean BMI at First and Last Kit (n=400\*)

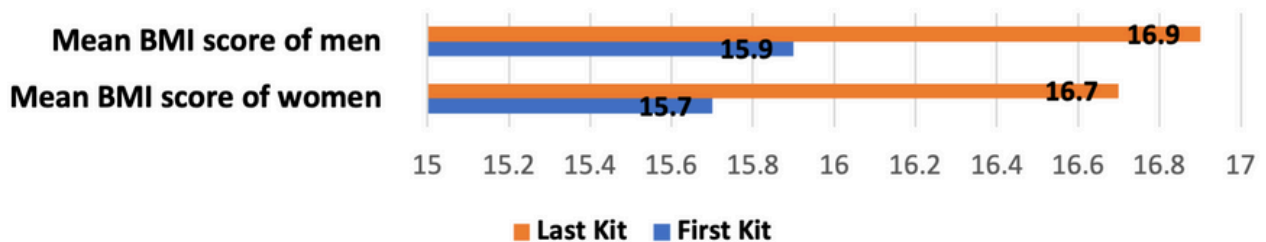


\*Of the total 493 people with TB from Haridwar given Additional Nutrition Support, 93 were children

### Change in Mean BMI of People with TB who received different numbers of nutrition kits



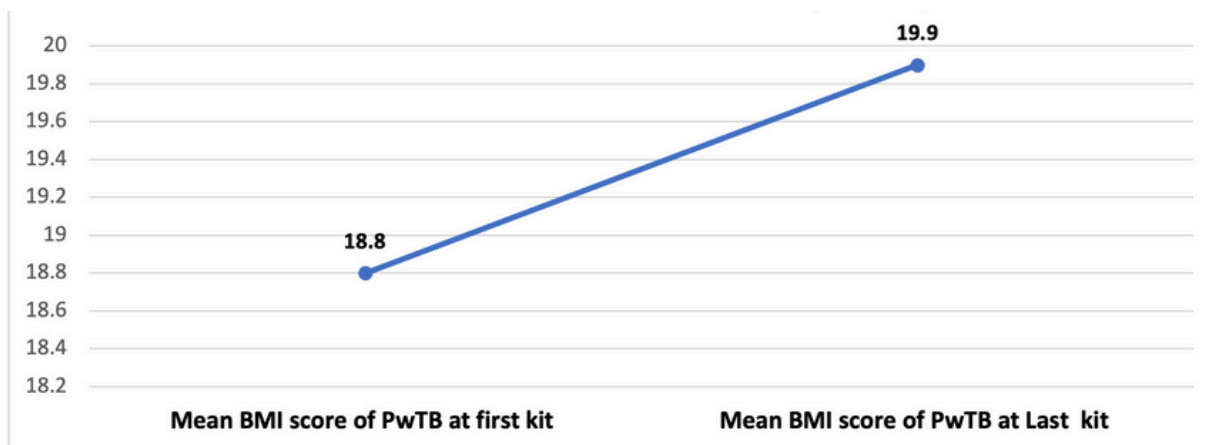
### Mean BMI of men and women assigned successful treatment outcomes among those who received additional nutrition support (n=256/F-140,M-116)



Total Number of PwTB assigned successful treatment outcomes who were supported with additional nutrition - 302  
 Number of PwTB with successful treatment outcomes who were supported with additional nutrition (15 yrs and above) n= 256

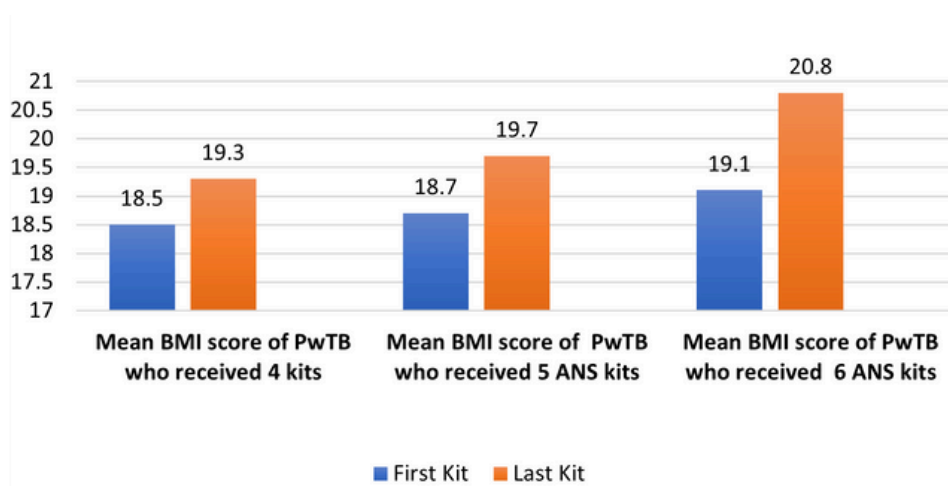
Number of TB Units covered	7
Number of Community Health Workers engaged	8
No of people with TB supported by CHWs with person-centred care services	976
Of the total supported, 415( 42.5%) people with TB had a BMI less than 18.5	
Of the total supported, 236 (24%), received additional nutrition kits in TB Hospital Patiala and TB Unit Kauli	
Total number of nutrition kits distributed	1147
Number of people with TB who received nutrition advice tailored to their specific vulnerabilities	406
9 Nutrition Support Group Meetings conducted with the participation of 367 people with TB and family members	
139 community awareness meetings conducted, sensitizing 2843 community members	
Number of people with TB for whom treatment outcomes were recorded on Ni-kshay	347
Among those with outcomes, number of people with TB assigned a successful treatment outcome	308 (87.8%)
Of the people with TB who received Additional Nutrition Support, treatment outcomes were recorded in Ni-kshay for 73 individuals. Among them, 63 (86.3%) were assigned successful outcomes	

### Mean BMI at First and Last Kit (n=202\*)

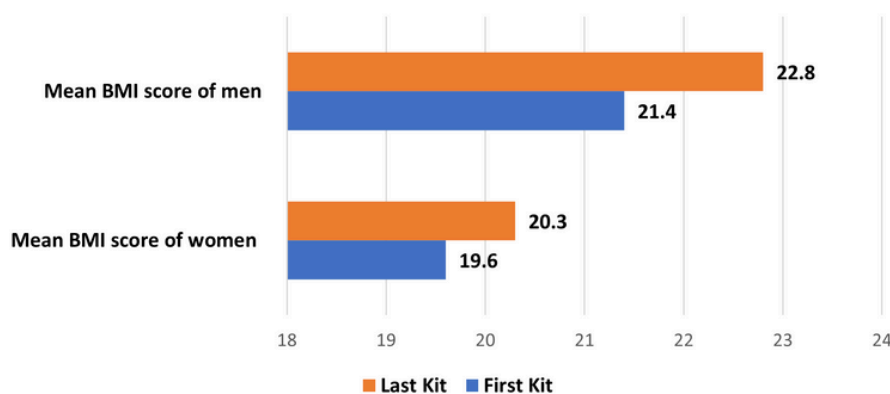


\*Of the total 236 people with TB in Patiala given Additional Nutrition Support, 34 were children

### Change in Mean BMI of People with TB who received different numbers of nutrition kits



### Mean BMI of men and women assigned successful treatment outcomes among those who received Additional Nutrition Support (n=55/F-26,M-29)

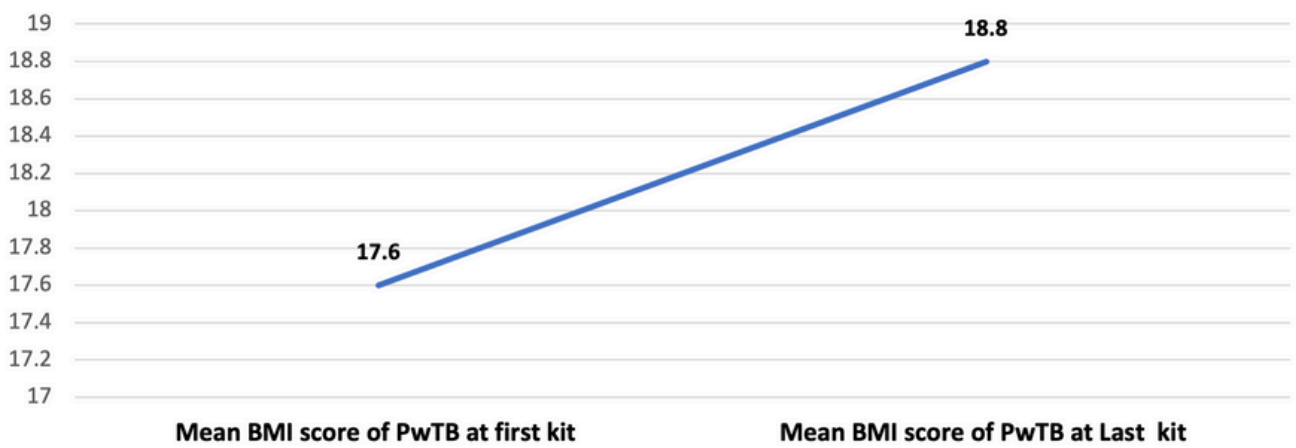


Total Number of PwTB assigned successful treatment Outcomes who were supported with additional nutrition - 63  
 Number of PwTB with successful treatment outcomes who were supported with additional nutrition (15 yrs and above) n= 55

# District East Godavari

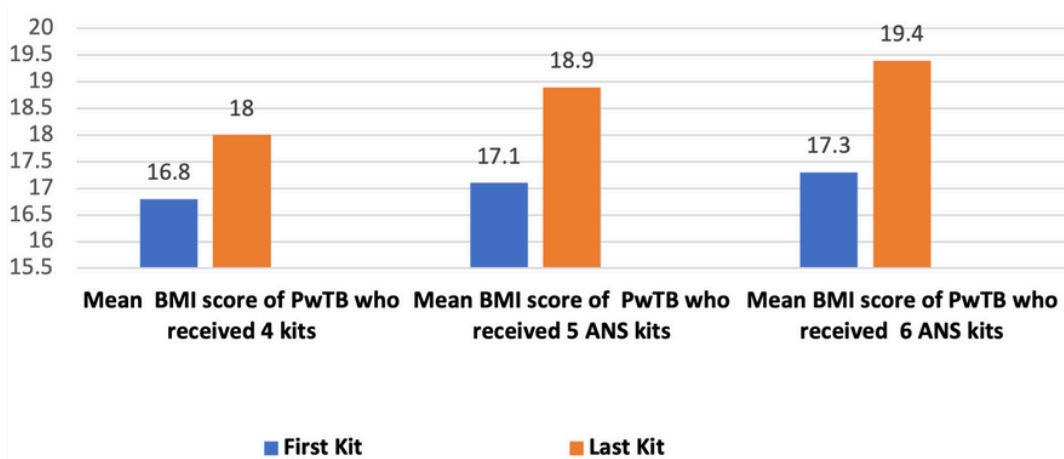
Number of TB Units covered	8
Number of Community Health Workers engaged	10
No of people with TB supported by CHWs with person-centred care services	1072
Of the total supported, 419 (39%) of people with TB had a BMI less than 18.5	
Of the total supported, 279 (26%), received additional nutrition kits across all eight TB Units	
Total number of nutrition kits distributed	1291
Number of people with TB who received nutrition advice tailored to their specific vulnerabilities	380
12 Nutrition Support Group Meetings conducted with the participation of 472 people with TB and family members	
131 community awareness meetings conducted, sensitizing 2320 community members	
Number of people with TB for whom treatment outcomes were recorded on Ni-kshay	489
Among those with outcomes, number of people with TB assigned a successful treatment outcome	474 (96.9%)
Of the people with TB who received Additional Nutrition Support, treatment outcomes were recorded in Ni-kshay for 202 individuals. Among them, 191 (94.5%) were assigned a successful outcome.	

### Mean BMI at First and Last Kit (n=247\*)

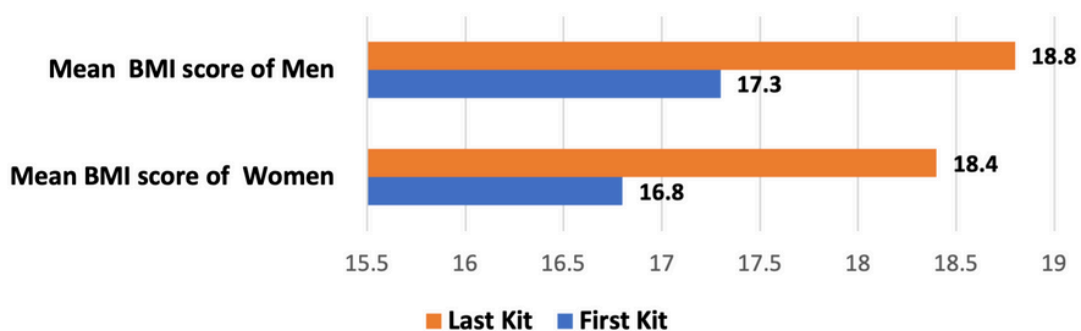


\*Of the total 279 people with TB given Additional Nutrition Support, 32 were children

### Change in Mean BMI of People with TB who received different numbers of nutrition kits



### Mean BMI of men and women assigned successful treatment outcomes among those who received Additional Nutrition Support (n=175/F-55,M-120)



Total Number of PwTB assigned successful treatment Outcomes who were supported with additional nutrition - 191  
 Number of PwTB with successful treatment outcomes who were supported with additional nutrition (15 yrs and above) n= 175



टीबी उन्मूलन के लिए जन भागीदारी का अभियान

**टी.बी. युनिट रुड़की (हरिद्वार)**  
**टीबी रोगियों की सहायता का संकल्प लें।**

**प्रधानमंत्री टी.बी.मुक्त भारत अभियान**  
हर व्यक्ति, हर संस्था, सिविल सोसाइटी व जनप्रतिनिधि यह संकल्प लें कि वे नि-क्षय मित्र बनकर, टी.बी. मुक्त भारत बनाने में सक्रिय भूमिका निभायेंगे।  
**नि-क्षय हेल्पलाईन : 1800-11-6666**

  
**क्षय रोग उन्मूलन केन्द्र**  
उपजिला-चिकित्सालय, रुड़की

टी.बी.यूनिट  
रुड़की

कृपया इधर-उधर  
ना थुकेँ।

क्षय रोग केन्द्र  
की दवा इधर मिलती हैं।

कृपया मास्क  
कर रहेँ।

**दिशा**

1. सभी क्षय रोगियों को आरोग्य अनिवार्य है।
2. सभी क्षय रोगियों को अपना फोटोकॉपी जमा करवाना अनिवार्य है।
3. सभी क्षय रोगियों (PULM) परिवार के सभी सदस्यों को टी.बी. एक्स-रे परीक्षण) करवाना अनिवार्य है।
4. सभी क्षय रोगियों को एच.आर.टी. अनिवार्य है।
5. सभी क्षय रोगियों दूसरे व छुटकारा अनिवार्य है।
6. क्षय रोगियों को मास्क लगाकर आना अनिवार्य है।
7. कृपया इधर-उधर ना थुकेँ।

**शीघ्र स्वास्थ्य**

1. समय पर अपनी दवाई लें।
2. तबीयत सम्बन्धी किसी भी चिकित्सक से जल्द से जल्द संपर्क करें।
3. अपने चिकित्सक से निर्धारित समय पर दवा लें।
4. दिन में 4-5 बार पौष्टिक भोजन करें।
5. शराब, तम्बाकू एवं अन्य नशील पदार्थों से बचें।
6. खाँसते एवं छिंकते समय रुकें।

**टी.बी. की दवा**

For more information on HUL  
<https://www.hul.co.in/>

For more information on REACH  
[www.reachindia.org.in](http://www.reachindia.org.in)

