



## CAPACITY BUILDING OF RESIDENT DOCTORS & INTERNS REGARDING NATIONAL TUBERCULOSIS ELIMINATION PROGRAMME (NTEP): A MEDICAL EDUCATION PERSPECTIVE

**Dr. Shivam Raj**

Resident Doctor, Community Medicine, Dr. Bvp Rural Medical College, Loni

**Dr. D. B. Phalke**

Professor & Head Of Department, Dr. Bvp Rural Medical College, Pims Du, Loni

### ABSTRACT

**Background:** The National Tuberculosis Elimination Programme (NTEP) in India necessitates robust training for medical residents and interns to effectively manage tuberculosis (TB). However, current educational efforts often fall short in addressing practical skills and contextual challenges in TB management. **Methods:** A qualitative study was conducted involving semi-structured interviews and focus group discussions with medical residents, interns, and key stakeholders. Thematic analysis was employed to identify training needs, preferences for educational modalities, and challenges faced in current NTEP training programs. **Results:** Participants expressed a critical need for enhanced practical training in TB diagnosis, treatment protocols, and management of drug-resistant TB cases. They favored interactive workshops and case-based learning to bridge gaps between theoretical knowledge and clinical practice. Challenges included inadequate faculty training, limited access to updated guidelines, and varying educational standards across institutions. **Conclusion:** The findings underscore the urgency of developing a tailored, competency-based training program for residents and interns in NTEP. Recommendations include curriculum revision to emphasize practical skills, faculty development initiatives, and improvements in infrastructure and resources. Addressing these issues will better prepare future healthcare professionals to contribute effectively to TB elimination efforts in India.

**KEYWORDS :** Tuberculosis, Education, NTEP, Medical Students

### INTRODUCTION

The National Tuberculosis Elimination Programme (NTEP) stands at the forefront of India's public health initiatives, aiming to eradicate tuberculosis (TB) through comprehensive strategies and community engagement. In this crucial endeavor, the role of resident doctors and interns cannot be overstated. As future healthcare leaders, they represent the frontline in diagnosing, treating, and preventing TB, making their education in NTEP protocols and practices paramount.

Capacity building within the framework of NTEP equips resident doctors and interns with the necessary skills and knowledge to effectively combat TB.<sup>1</sup> This educational initiative extends beyond mere theoretical understanding, emphasizing practical application through hands-on training and real-world experience. By immersing themselves in NTEP guidelines, these medical professionals learn to navigate complex diagnostic challenges, manage treatment regimens, and engage with patients and communities sensitively and effectively.

From a medical education perspective, integrating NTEP into residency and internship programs not only enhances clinical competencies but also instills a profound sense of public health responsibility. Through workshops, seminars, and interactive sessions, participants gain insights into the epidemiology of TB, the latest advancements in diagnostics and treatment, and the socio-economic factors influencing TB prevalence and outcomes. Such holistic learning experiences foster a multidisciplinary approach to healthcare delivery, encouraging collaboration between medical professionals, researchers, and policymakers.<sup>2</sup>

Moreover, by nurturing a culture of continuous learning and evidence-based practice, capacity building ensures that resident doctors and interns remain updated with evolving NTEP strategies and global health standards. This ongoing education empowers them to adapt to emerging challenges such as drug-resistant TB and co-infections, thus reinforcing their role as catalysts for sustainable TB elimination.

In conclusion, effective capacity building of resident doctors and interns in the context of NTEP not only strengthens healthcare systems but also upholds the promise of a TB-free India. By investing in their education today, we pave the way

for a healthier and more resilient future tomorrow.

**Aim:** To design a need-based program for training residents and interns about NTEP

### Methodology

**Study Design:** The research employed a qualitative approach, specifically utilizing semi-structured interviews and focus group discussions (FGDs). Qualitative methods are chosen because they allow for in-depth exploration of participants' perceptions, experiences, and insights related to TB management and training needs. This design ensures a comprehensive understanding of the contextual factors influencing NTEP training requirements among medical residents and interns.

**Population:** The target population includes medical residents and interns currently involved in clinical training programs across various healthcare institutions. Other stakeholders like the program manager, TB SVs, Clinicians, Medical Education and Community Medicine experts were also included

**Sampling Technique:** Purposive sampling was employed to select participants who have direct experience with TB management and are likely to provide rich, relevant insights into training needs. Key informants such as senior faculty members and program coordinators were also included to provide institutional perspectives.

**Sample Size:** Approximately 30-40 participants were recruited, consisting of residents, interns, and relevant stakeholders. This sample size allowed for a saturation of themes and diverse perspectives across different training settings and levels of experience.

### Data Collection Methods

**Semi-Structured Interviews:** Individual interviews were conducted with residents and interns to explore their perceptions of the current training in NTEP, identify gaps in knowledge and skills, and understand their preferences for educational formats and content.<sup>3</sup>

**Focus Group Discussions (FGDs):** FGDs were conducted to encourage group interaction and to explore shared experiences, challenges, and potential solutions related to

NTEP training. These discussions provided a deeper understanding of collective perceptions and fostered insights into group dynamics and consensus regarding training needs.

**Data Collection Tools:** Interview and FGD guides were developed based on a literature review and preliminary discussions with experts in TB management and medical education. These tools were pilot-tested to ensure clarity, relevance, and cultural appropriateness before full implementation.

#### Data Analysis

**Thematic Analysis:** Data from interviews and FGDs were transcribed verbatim and analyzed using thematic analysis. This approach involves systematically coding the data to identify recurring themes, patterns, and variations related to training needs, preferences, and challenges.

**Coding Process:** Initial coding involved open coding to identify broad themes emerging from the data

#### Ethical Considerations:

**Informed Consent:** Before data collection, informed consent will be obtained from all participants, emphasizing voluntary participation, confidentiality, and the right to withdraw at any time.

**Ethical Approval:** Ethical approval was taken from IEC.

**Data Integration and Interpretation:** Data integration will involve triangulating findings from interviews and FGDs to identify convergent and divergent perspectives. The interpretation phase will focus on synthesizing themes to inform the development of a comprehensive training program tailored to the identified needs and preferences of residents and interns regarding NTEP.

## RESULTS AND DISCUSSION

### 1. Overview of Findings

The qualitative study aimed to design a need-based training program for residents and interns regarding the National Tuberculosis Elimination Programme (NTEP). Data were gathered through semi-structured interviews and focus group discussions (FGDs) with medical residents, interns, and key stakeholders involved in TB management and medical education. Thematic analysis of the data identified several key themes related to training needs, preferences, and challenges faced by participants in relation to NTEP.

### 2. Training Needs and Gaps

Participants unanimously expressed a need for structured and comprehensive training in TB management under the NTEP. Residents highlighted gaps in their current education, particularly in practical skills such as TB diagnosis, treatment protocols, and management of drug-resistant TB cases. Interns emphasized the importance of hands-on experience and mentorship in gaining confidence and competence in managing TB patients effectively.

One resident commented, "We learn about TB in theory, but when faced with real cases, we feel unprepared. There's a need for more practical training and exposure during our residency."

### 3. Preferences for Training Modalities

Regarding preferred training modalities, participants showed a strong inclination towards interactive workshops, case-based learning, and simulation exercises. They emphasized the importance of interactive sessions that simulate real-world scenarios, allowing them to apply theoretical knowledge to practical situations.

A participant from an FGD noted, "Workshops where we can discuss cases and practice decision-making would be most beneficial. It helps us understand the complexities of TB management better."

### 4. Challenges in Current Training Programs

Several challenges were identified in the current training programs related to NTEP. These included inadequate faculty training, limited access to updated resources and guidelines, and insufficient integration of TB management into the broader medical curriculum. Participants expressed frustration with the lack of continuity in training modules and inconsistencies in educational approaches across different training institutions.

A stakeholder highlighted, "There's a disconnect between what's taught in classrooms and what residents and interns encounter in the field. We need standardized, evidence-based training that prepares them for real-world challenges."

#### Institutional Support and Resources

Participants stressed the importance of institutional support and adequate resources for effective training in NTEP. They emphasized the need for dedicated TB wards or clinics where residents and interns can gain practical experience under supervision. Moreover, they advocated for regular updates on guidelines and protocols and opportunities for continuing education to keep abreast of advances in TB management.

A senior faculty member shared, "Our institution needs to invest more in creating a conducive learning environment for TB management. This includes faculty development programs and infrastructure improvements."

## DISCUSSION OF FINDINGS

The findings underscore the critical need for a tailored and contextually relevant training program for residents and interns regarding NTEP. The identified gaps in current training highlight opportunities for curriculum enhancement and educational reform to better prepare medical trainees for TB management challenges.<sup>4</sup>

The preference for interactive and experiential learning modalities reflects a shift towards competency-based education, emphasizing practical skills development alongside theoretical knowledge acquisition. This approach not only enhances learning outcomes but also fosters a deeper understanding of the complexities involved in TB management within the NTEP framework.<sup>5</sup>

Challenges identified, such as faculty training and resource constraints, call for institutional commitment and support to ensure sustainable improvements in TB training programs. Addressing these challenges requires collaboration between medical educators, policymakers, and healthcare institutions to streamline educational efforts and integrate TB management seamlessly into medical curricula.

#### Implications for Practice

Based on the findings, several recommendations emerge for the development of a need-based training program for residents and interns in NTEP:

- **Curriculum Revision:** Incorporate structured modules on TB management aligned with NTEP guidelines, emphasizing practical skills and clinical decision-making.
- **Faculty Development:** Provide training opportunities for faculty members to enhance their teaching skills and update their knowledge of TB management.
- **Infrastructure Improvement:** Allocate resources for dedicated TB wards or clinics where residents and interns can receive supervised training and hands-on experience.
- **Continuous Evaluation:** Implement mechanisms for

ongoing evaluation and feedback to ensure the relevance and effectiveness of the training program.

In conclusion, designing an effective training program for residents and interns regarding NTEP requires a multifaceted approach that addresses identified training needs, leverages preferred learning modalities, and overcomes existing challenges in current educational practices. By implementing these recommendations, healthcare institutions can better equip future healthcare professionals to contribute effectively towards the goal of tuberculosis elimination in India.

## REFERENCES

1. Giri PA, Phalke DB. Impact of sensitization workshop on knowledge regarding tuberculosis among final year medical students. *International journal of medicine and public health*. 2013;3(1).
2. Giri PA, Deshpande JD, Phalke DB. Prevalence of pulmonary tuberculosis among HIV positive patients attending antiretroviral therapy clinic. *North American journal of medical sciences*. 2013 Jun;5(6):367.
3. Baviskar MP, Sinha A, Javadekar SS, Bhalwar R. Need-based training of community health officers for tuberculosis care in Ahmednagar district of Maharashtra, India: A before and after study. *Journal of Education and Health Promotion*. 2021 Jan 1;10(1).
4. Kinikar A, Chandanwale A, Kadam D, Joshi S, Basavaraj A, Pardeshi G, Girish S, Shelke S, DeLuca A, Dhumal G, Golub J. High risk for latent tuberculosis infection among medical residents and nursing students in India. *PLoS One*. 2019 Jul 8;14(7):e0219131.
5. Sharma N, Nath A, Taneja DK, Ingle GK. A qualitative evaluation of the information, education, and communication component of the tuberculosis control program in Delhi, India. *Asia Pacific Journal of Public Health*. 2009 Jul;21(3):321-32.