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Editorial

Impact of strengthening TB diagnostic services in Uttarakhand: A step towards TB elimination

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ABSTRACT

Tuberculosis (TB) poses a significant public health challenge in Uttarakhand, India. To address this, the state has implemented strategic measures aimed at increasing the presumptive TB case examination rate. Key initiatives include the deployment of 40 additional molecular diagnostic machines, facilitated by the Corporate Social Responsibility (CSR), ensuring comprehensive coverage and enhancing field-level testing capabilities. The proactive procurement of molecular diagnostic chips and consumables at the state level has ensured an uninterrupted supply, bolstering testing capacity across all blocks. Additionally, regular fortnightly reviews and monitoring at the block level have been instituted to set targets, involve local leadership, and foster continuous improvement. These combined efforts have significantly improved the diagnostic capacity and operational efficiency of TB control measures in Uttarakhand, demonstrating the state's commitment to effective TB management and eventual elimination.

1. Introduction

Tuberculosis (TB) remains a critical public health issue in India, with the state of Uttarakhand being no exception. The disease poses a substantial challenge due to its infectious nature and the need for timely diagnosis and treatment to prevent its spread. In response to this ongoing challenge, Uttarakhand has adopted several strategic initiatives aimed at increasing the presumptive TB case examination rate, which is essential for early detection and effective management of TB cases.

Previously, the state did not have molecular diagnostic tools in every block, which adversely affected the implementation of universal drug susceptibility testing. The lack of machines led to the unnecessary transport of samples, causing significant delays in testing and subsequent treatment.

The state's efforts have been multifaceted, focusing on the enhancement of diagnostic capabilities and ensuring the continuous availability of necessary resources. One of the pivotal steps has been the deployment of additional molecular diagnostic machines across blocks that previously lacked adequate testing facilities. This deployment was made possible through the Corporate Social Responsibility (CSR) initiative of the Indian Oil Corporation, which has played a significant role in augmenting the state's diagnostic infrastructure.

Moreover, Uttarakhand has taken proactive measures to procure molecular diagnostic chips and consumables at the state level, particularly during times when central supplies were inconsistent. This initiative has ensured that testing operations continue uninterrupted, thus maintaining and

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increasing the state's testing capacity.

This document delves into the key initiatives undertaken by Uttarakhand to enhance the presumptive TB case examination rate, illustrating the impact of these measures on the state's TB diagnostic and control capabilities.

2. Key Initiatives to Increase Presumptive TB Case Examination Rate

2.1. Deployment of additional molecular diagnostic machines

The deployment of 40 additional molecular diagnostic machines in blocks where these were previously unavailable marks a significant stride in the fight against TB. This effort was made possible through the Corporate Social Responsibility (CSR) initiative of the Indian Oil Corporation.

2.2. Impact on TB Case Examination

1. Full coverage: With the deployment of these machines, all blocks in Uttarakhand are now saturated with molecular diagnostic systems, ensuring that no region lacks access to rapid and accurate TB testing.
2. Enhanced field-level testing: The availability of molecular diagnostic machines at the block level enables prompt and effective field-level testing, which is critical for early detection and treatment.
3. Operational efficiency: These machines are known for their quick turnaround time and high accuracy, thus improving the overall efficiency of the TB diagnostic process.

2.3. Sustained supply chain management of molecular diagnostic chips and consumables

The state of Uttarakhand proactively managed the procurement of molecular diagnostic chips and consumables at the state level, especially during periods when the supply from the Central TB Division was affected.[1,2]

1. Uninterrupted Supply: By ensuring a steady supply of molecular diagnostic consumables, the state has maintained consistent testing operations without disruptions.
2. Increased Testing Capacity: The availability of necessary consumables has allowed for sustained and increased testing capacity across all blocks.
3. State-Level Management: This approach demonstrates the state's commitment to self-sufficiency and proactive problem-solving in TB management.

2.3.1. Regular review and monitoring

Regular fortnightly reviews and monitoring from the state level at the block level have been instituted to enhance the presumptive TB examination rate.

1. Target Setting and Review: Specific targets for presumptive TB case examinations are set and regularly reviewed. This ensures accountability and progress tracking at the block level.
2. Block MO-IC Involvement: The involvement of Block Medical Officers-In-Charge (MO-IC) in the review process emphasizes the importance of local leadership in achieving TB control targets.
3. Continuous Improvement: Regular monitoring allows for the identification of gaps and implementation of corrective actions in a timely manner, fostering a culture of continuous improvement.

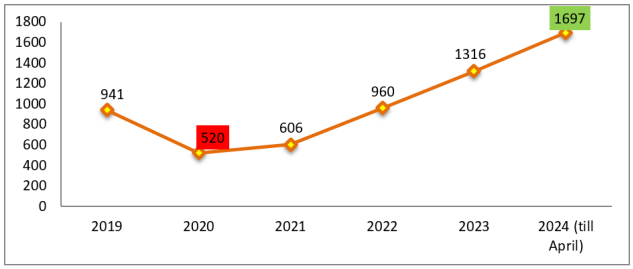

Figure 1: Increase presumptive TB examination rate

The provided graph illustrates the annual presumptive TB case examination rates in Uttarakhand from 2019 to April 2024. The data highlights a notable trend of fluctuating examination rates over the years, followed by a significant increase in recent years, reflecting the impact of the strategic measures implemented by the state.

The graph encapsulates the substantial progress made by Uttarakhand in increasing the presumptive TB case examination rate through strategic interventions. The steep rise in examination rates, especially in 2023 and early 2024, is a testament to the effectiveness of the deployed diagnostic infrastructure, efficient procurement practices, and rigorous monitoring. These efforts have not only enhanced diagnostic capacity but also ensured a robust and responsive TB control program, ultimately leading to improved public health outcomes in the state.

Furthermore, the increase in examination rates has also led to a rise in TB case notifications. The enhanced testing capabilities and availability of molecular diagnostic machines have facilitated Universal Drug Susceptibility Testing (UDST), addressing a significant issue that existed previously. This comprehensive approach has improved the detection and management of TB cases, contributing to the overall effectiveness of the TB control program in Uttarakhand.

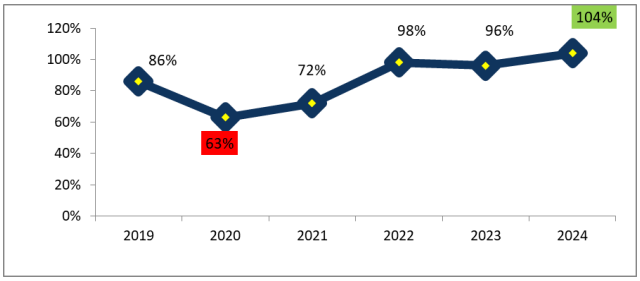

Figure 2: Increase TB notification rate

The graph indicates the percentage change in TB notifications from 2019 to 2024. The data reveals several key trends that can be linked to the strengthening of TB diagnostic services through the deployment of 40 additional molecular diagnostic machines at the block level.

In 2019, TB notification is at 86%. However, there was a significant drop to 63% in 2020, possibly due to disruptions caused by the COVID-19 pandemic, which affected many healthcare services, including TB diagnostics and reporting. By 2024, TB notifications had increased to 104%, indicating continued and possibly enhanced effectiveness of the strengthened diagnostic measures. The steady rise and subsequent stabilization at higher levels of notification reflect the positive impact of the additional molecular diagnostic machines on TB detection and reporting.

Overall, the deployment of these machines has resulted in a significant improvement in TB notification rates post-2020, with sustained higher levels from 2021 onwards, culminating in a peak of 104% in 2024. This trend underscores the effectiveness of the strengthened TB diagnostic services in improving TB detection and reporting.

3. Conclusion

The graph encapsulates the substantial progress made by Uttarakhand in increasing the presumptive TB case examination rate through strategic interventions. The steep rise in examination rates, especially in 2023 and early 2024, is a testament to the effectiveness of the deployed diagnostic infrastructure, efficient procurement practices, and rigorous monitoring. These efforts have not only enhanced diagnostic capacity but also ensured a robust and responsive TB control program, ultimately leading to improved public health outcomes in the state.

4. Source of Funding

None.

5. Conflict of Interest

None.

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By adopting these strategic recommendations, Uttarakhand can sustain the momentum gained in increasing the presumptive TB case examination rate and move closer to achieving TB elimination. We would like to extend our heartfelt gratitude to the Indian Oil Corporation Ltd. for their generous support of the National TB Elimination Program in Uttarakhand. By providing 40 molecular diagnostic tools, they have significantly increased both the presumptive TB examination rate and the TB notification rate. This contribution is a major step forward in our ongoing efforts to eliminate tuberculosis and improve public health outcomes in the region. A coordinated and collaborative effort involving government agencies, healthcare providers, communities, and partners is essential to overcoming the challenges posed by TB and ensuring the health and well-being of all residents in the state. The continued commitment to innovation, capacity building, and community engagement will be key to the long-term success of TB control efforts in Uttarakhand.

References

1. Revised National Tuberculosis Control Programme Laboratory Network: Guidelines for Quality Assurance of smear microscopy for diagnosing tuberculosis. New Delhi, India: Ministry of Health & Family Welfare. Available from: https://tbcindia.gov.in/WriteReadData/l892s/4234099618RNTCP%20Lab%20Network%20Guidelines.pdf.
2. National Strategic Plan for Tuberculosis Elimination 2017–2025. New Delhi, India: Ministry of Health with Family Welfare. Available from: https://tbcindia.gov.in/WriteReadData/NSP%20Draft%2020.02.2017%201.pdf.

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