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ICMR's i-Drone initiative strengthens access to TB diagnostic services

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Transporting TB samples with the help of drones can reduce the time of diagnosis



The Indian Council of Medical Research (ICMR), under its flagship i-drone initiative, has demonstrated that drone-assisted transportation of sputum samples of tuberculosis (TB) can significantly improve access to diagnostic services for people living in remote and underserved areas.

These findings have emerged from a programme-based study conducted under the National TB Elimination Programme (NTEP) in collaboration with AIIMS Bibinagar and the District TB Office in Yaddry-Bhuvanagiri district of Telangana.

The study compared the traditional system of patients' visits for TB diagnosis to a drone-based model, in which sputum samples were collected from primary health centres (PHCs) and sub-centres (SCs) and transported by drones to designated TB diagnostic laboratories (UTs).

The study involved 840 participants and found that the average time for TB diagnosis decreased from 15 days to 5 days after drone-based sample transport began. It also significantly reduced delays in diagnosis, enabling early confirmation of the disease and accelerating clinical decision-making.

Importantly, this study also showed a significant reduction in the financial burden on patients. The average cost of individual TB diagnosis (OOPE) has come down from about Rs 9,451 under conventional transport system to about Rs 91 in drone-based phase. This reduction was primarily due to reduction in travel costs, reduction in salary loss, and availability of facilities to collect sputum samples near patients' homes.

Notably, the average OOPE during the drone-based phase was zero, indicating that many participants did not have to incur any travel expenses for diagnosis. The measure was implemented through a hub-and-spoke network connecting 11 primary health centres, 60 sub-centres, and four TB units. This facilitated patients to collect sputum samples at health facilities located near their villages instead of travelling long distances to diagnostic centres.

This study further corroborates the growing evidence received under ICMR's i-Drone initiative, which is exploring the possibilities of safe and effective use of drones to transport vaccines, drugs, blood products, clinical samples, tissues, etc. to improve access to healthcare services in hard-to-reach areas across the country.