

DIAGNOSTIC DISRUPTIONS AND TREATMENT OUTCOMES AMONG PEOPLE WITH PULMONARY TB BEFORE, DURING AND AFTER THE COVID-19 PANDEMIC IN UZBEKISTAN

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Background. The COVID-19 pandemic placed major strain on tuberculosis (TB) services worldwide. Evidence from Central Asia on how disruptions in early TB detection and access to rapid molecular testing were associated with treatment outcomes remains limited.

Methods. A retrospective cohort study was conducted among adults (≥ 18 years) with pulmonary TB initiating treatment in TB facilities in Tashkent, Uzbekistan, in 2019-2022 (N=1782). The symptom onset-care seeking interval and coverage of sputum smear microscopy and Xpert MTB/RIF were compared across the pre-pandemic (2019), pandemic (2020-2021), and post-pandemic (2022) periods. Overall diagnostic indicators were assessed in the full cohort, while factors associated with WHO-defined unsuccessful treatment outcomes were analyzed among people with newly diagnosed pulmonary TB. Associations with unsuccessful treatment outcomes were assessed using multivariable logistic regression with adjusted odds ratios (AOR) and 95% confidence intervals (CI).

Results. Among people with newly diagnosed pulmonary TB, the proportion without a documented Xpert MTB/RIF result increased from 6.5% in 2019 to 13.2% in 2020-2021 and 13.4% in 2022 ($p=0.004$). Treatment outcomes differed significantly across study periods ($p<0.001$), with unsuccessful outcomes increasing from 20.2% in 2019 to 23.4% in 2020-2021 and 23.5% in 2022. Delayed care seeking remained frequent across all study periods, reaching 52.9% in 2022, although differences between periods were not statistically significant ($p=0.103$). Sputum smear microscopy coverage remained consistently high across all periods (98.7-100.0%). Multivariable logistic regression identified independent predictors of unsuccessful treatment outcomes (table).

Table. Multivariable logistic regression for an unsuccessful treatment outcome among people with newly diagnosed pulmonary TB, n=1176

Predictors	Unadjusted		Adjusted	
	COR; 95% CI	p	AOR; 95% CI	p
Age at treatment initiation, years	1.010; 1.000–1.020	0.042	1.008; 0.998–1.018	0.112
Male sex	1.886; 1.338–2.659	<0.001	1.917; 1.354–2.716	<0.001
“Symptom onset-care seeking” interval, days	1.001; 0.998–1.003	0.644	1.001; 0.998–1.004	0.516
No documented Xpert MTB/RIF result	1.589; 1.011–2.499	0.045	1.613; 1.017–2.557	0.042

Reference categories: female sex, documented Xpert MTB/RIF result available.

Conclusions. Disruptions affecting early TB detection persisted beyond the acute pandemic period. The absence of a documented Xpert MTB/RIF result was independently associated with unsuccessful treatment outcomes, highlighting the importance of maintaining rapid molecular testing capacity and resilient diagnostic pathways during health system disruptions.