

Suggested Title:

National Implementation of Chest Radiographic Mass Screening for Tuberculosis in Indonesian Correctional Settings

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Background

Tuberculosis (TB) transmission in correctional settings is amplified by crowding, limited ventilation, and frequent movement. Symptom-based screening may miss asymptomatic disease. We evaluated national implementation of X-ray-based active case finding (ACF) for TB detection in Indonesian correctional settings.

Methods

We analyzed screening and notification data from Indonesian detention and correctional facilities during 2020-2025. Detection in 2020-2021 relied on symptom-based approaches. X-ray-based ACF was introduced in 2022, scaled up in 2023, not widely implemented in 2024, and reintroduced at near-universal coverage in 2025. ACF included symptom assessment, chest X-ray, and rapid molecular testing for persons with X-ray findings suggestive of TB. Outcomes included screening coverage, ACF yield, notifications, and rates per 100,000 persons.

Results

Notifications were approximately 1,500 annually in 2020 and 2021. In 2022, 2023, and 2025, X-ray screening coverage was 17% (47,185 of 275,103 incarcerated persons), 76% (206,346 of 272,240), and 96% (264,678 of 273,085), respectively. Notifications increased to 2,713 in 2022 and 6,039 in 2023, fell to 2,151 in 2024 with limited ACF, and rose to 7,972 in 2025. This corresponded to changes in notification rates per 100,000 incarcerated person-years across the study period (non-ACF years: 602, 554, and 788 in 2020, 2021, and 2024; ACF years: 986, 2,218, and 2,919 in 2022, 2023, and 2025) (Figure 1). Yield from X-ray-based ACF was high in implementation years: 1,984 in 2022, 2,370 in 2023, and 1,992 cases per 100,000 screened in 2025.

Conclusion

X-ray-based ACF substantially increased TB case detection at high coverage. The sharp decline in notifications in 2024, when X-ray-based ACF was not widely implemented, supports the limited sensitivity of symptom-based screening and need for sustained radiographic screening in correctional settings.

Disclosure of Interest Statement: The authors declare no conflicts of interest.

Figure. Tuberculosis notifications by detection pathway in Indonesian correctional facilities, 2020–2025

