

TB in the Margins: A Focused Outbreak Response in Gua Musang

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Case Report

Tuberculosis (TB) remains a major public health issue in Malaysia, especially among vulnerable populations such as the Orang Asli (OA) (1). On 28 October 2024, the Meranto Health Clinic notified the first smear-positive TB case linked to Pos Kuala Wook, followed by two additional cases on 30 October 2024. The outbreak was officially verified on 3 November 2024, prompting immediate field response, including Intensified Case Finding (ICF) in Kg Kuala Wook and Kg Kaloi. This study aims to identify active and latent TB cases and explore contributing factors and challenges in managing the outbreak among the OA community.

A cross-sectional epidemiological investigation was conducted from 3 November 2024 to 3 May 2025 involving 79 OA individuals from Kg Kuala Wook and Kg Kaloi. All active TB cases and Mantoux-positive individuals were included. Descriptive analysis was performed using Microsoft Excel 365. Outbreak response measures included contact tracing, active case detection (ACD) through community-based ICF with symptom screening and diagnostic testing, and treatment initiation for active TB and LTBI. Screening tools used were the Mantoux tuberculin skin test (TST) and chest radiography.

The outbreak involved two Orang Asli (Temiar) settlements at Kg Kuala Wook and Kg Kaloi located 11 km apart, with a total population of 195 (Kg Kuala Wook: 145; Kg Kaloi: 50). Both villages are only accessible by 4WD via logging roads and have limited access to clinics (15-26km) and hospital (>50km). Three smear-positive TB cases were identified, all adults aged 18-64 years, consisting of two male who were farmers and one female who was a housewife. Two cases were detected via ACD and one via PCD. All were BCG-vaccinated. The index case frequently moved between villages and likely transmitted TB to close household contacts.

During ICF, 79 individuals underwent Mantoux testing, of whom 75 (94.9%) returned for reading and 25 (33.3%) tested positive. Of those with positive Mantoux results, the majority (84%) were adults aged 18–64 years, and most were females (64%) and housewives (64%). Nearly all were asymptomatic (96%) and had received BCG vaccination (84%). Chest radiography was performed on 23 Mantoux-positive individuals, with no radiological evidence of active TB observed, and two defaulted on the chest radiography screening. LTBI therapy was initiated in 92% of Mantoux-positive individuals. Contributing factors to increased TB transmission risk included overcrowded single-space houses, frequent inter-village mobility, limited access to healthcare, and cultural health-seeking behaviours.

The outbreak response highlights the importance of early detection, targeted intervention, and culturally sensitive health education in controlling TB among Orang Asli communities (2,3). The high Mantoux positivity rate and confirmed epidemiological links indicate ongoing latent TB transmission risks in this vulnerable population (4). The presence of asymptomatic Mantoux-support individuals further supports the need for routine LTBI screening in high-risk communities (5). This investigation revealed active transmission of TB within and between Orang Asli villages, emphasising the need for targeted screening, culturally appropriate health education, and accessible treatment services. Recommended actions include strengthening mobile teams for TB and LTBI screening, enhancing TB education tailored to local culture, and utilising portable chest radiography units to improve screening in remote communities.

Table 1. Characteristics of Mantoux Positive Individuals (n=25)

Characteristic	Kg Kuala Wook (n = 20) n (%)	Kg Kaloi (n = 5) n (%)	Total (n = 25) n (%)
Age Group			
18–64 years	16 (80.0)	5 (100.0)	21 (84.0)
≥65 years	4 (20.0)	0 (0.0)	4 (16.0)
Gender			
Male	8 (40.0)	1 (20.0)	9 (36.0)
Female	12 (60.0)	4 (80.0)	16 (64.0)
Occupation			
Unemployed	2 (10.0)	0 (0.0)	2 (8.0)
Housewife	12 (60.0)	4 (80.0)	16 (64.0)
Farmer	6 (30.0)	1 (20.0)	7 (28.0)
Symptom Status			
Symptomatic	1 (5.0)	0 (0.0)	1 (4.0)
Asymptomatic	19 (95.0)	5 (100.0)	24 (96.0)
BCG Vaccination			
Vaccinated	16 (80.0)	5 (100.0)	21 (84.0)
Unvaccinated	4 (20.0)	0 (0.0)	4 (16.0)
LTBI Therapy			
Initiated	19 (95.0)	4 (80.0)	23 (92.0)
Not Initiated	1 (5.0)	1 (20.0)	2 (8.0)

Keywords: Tuberculosis, outbreak, Orang Asli, case finding, LTBI**Acknowledgement**

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