

## Abstract

**OBJECTIVE** To assess the prevalence and risk factors of drug-resistant tuberculosis (TB), the fifth national anti-TB drug resistance survey was conducted in Thailand.

**METHODS** A cross-sectional study was conducted by stratified cluster sampling with probability proportional to size of TB cases from public health facilities in 100 clusters throughout Thailand from August 2017 to August 2018. Susceptibility testing of TB isolates to first- and second-line anti-TB drugs was performed on Löwenstein–Jensen medium using the indirect proportion method. Multiple imputation was done for handling missing data using Stata 16. The proportion of TB cases with drug resistance was determined. The odds ratio was used to evaluate risk factors associated with drug-resistant TB.

**RESULTS** Among 1501 new TB and 69 previously treated TB cases, 14.0% [95% confidence interval (CI): 12.1–16.1] and 33.4% (95% CI: 23.6–44.8), respectively, had resistance to any anti-TB drug. Multidrug-resistant TB accounted for 0.8% (95% CI: 0.5–1.4) of new TB cases and 13.0% (95% CI: 6.5–24.4) of previously treated TB cases. Drug-resistant TB was associated with prior TB treatment [odds ratio (OR), 2.9; 95% CI: 1.6–5.0], age at 45–54 years (OR, 1.6; 95% CI: 1.0–2.4), male (OR, 1.5; 95% CI: 1.0–2.1) and human immunodeficiency virus (HIV) infection (OR, 1.6; 95% CI: 1.0–2.4).

**CONCLUSIONS** The burden of drug-resistant TB remains high in Thailand. Intensified prevention and control measures should be implemented to reduce the risks of drug-resistant TB in high-risk groups previously treated, especially individuals of late middle age, males and those with coinfection of TB and HIV.

**keywords** *Mycobacterium tuberculosis*, drug susceptibility testing, prevalence, risk factors, Thailand

**Sustainable Development Goals (SDGs):** SDG 3 (good health and well-being), SDG 17 (partnerships for the goals)