

RESEARCH ARTICLE

Prevalence of bacteriologically-confirmed pulmonary tuberculosis in urban Blantyre, Malawi 2019–20: Substantial decline compared to 2013–14 national survey

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Abstract

Recent evidence shows rapidly changing tuberculosis (TB) epidemiology in Southern and Eastern Africa, with need for subdistrict prevalence estimates to guide targeted interventions. We conducted a pulmonary TB prevalence survey to estimate current TB burden in Blantyre city, Malawi. From May 2019 to March 2020, 115 households in middle/high-density residential Blantyre, were randomly-selected from each of 72 clusters. Consenting eligible participants (household residents ≥ 18 years) were interviewed, including for cough (any duration), and offered HIV testing and chest X-ray; participants with cough and/or abnormal X-ray provided two sputum samples for microscopy, Xpert MTB/Rif and mycobacterial culture. TB disease prevalence and risk factors for prevalent TB were calculated using complete-case analysis, multiple imputation, and inverse probability weighting. Of 20,899 eligible adults, 15,897 (76%) were interviewed, 13,490/15,897 (85%) had X-ray, and 1,120/1,394 (80%) sputum-eligible participants produced at least one specimen, giving 15,318 complete cases (5.895, 38% men). 29/15,318 had bacteriologically-confirmed TB (189 per 100,000 complete-case (cc) / 150 per 100,000 with inverse weighting (iw)). Men had higher burden (cc: 305 (95% CI: 144–645) per 100,000) than women (cc: 117 (95% CI: 65–211) per 100,000); cc adjusted odds ratio (aOR) 2.70 (1.26–5.78). Other significant risk factors for prevalent TB on complete-case analysis were working age (25–49 years) and previous TB treatment, but not HIV status. Multivariable analysis of imputed data was limited by small numbers, but previous TB and age group 25–49 years remained significantly associated with higher TB prevalence. Pulmonary TB prevalence for Blantyre was considerably lower than the 1,014 per 100,000 for urban Malawi in the 2013–14 national survey, at 150–189 per 100,000 adults, but some groups, notably men, remain disproportionately affected. TB

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