

The Triple Burden of Tuberculosis, Human Immunodeficiency Virus and Silicosis among Artisanal and Small-Scale Miners in Zimbabwe

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Abstract

Artisanal and small-scale mining is characterized by an excessive exposure to silica-containing dust, overcrowding, poor living conditions and limited access to primary health services. This poses a risk to tuberculosis, HIV infection and silicosis. The main purpose of the study is to evaluate the burden of tuberculosis, HIV and silicosis among artisanal and small-scale miners. We conducted a cross sectional study on 3821 artisanal and small-scale miners. We found a high burden of silicosis (19%), tuberculosis (6.8%) and HIV (18%) in a relatively young population, with the mean age of 35.5 years. Men were 1.8 times more likely to be diagnosed with silicosis compared to women, adjusted prevalence ratio [aPR = 1.75 (95% CI: 1.02-2.74)]. Artisanal and small-scale miners who were living with HIV were 1.25 times more likely to be diagnosed with silicosis compared to those who were negative, [aPR = 1.25 (1.00-1.57)]. The risk of silicosis increased with both duration as a miner and severity of exposure to silica dust. The risk of tuberculosis increased with the duration as a miner. Zimbabwe is currently experiencing a high burden of TB, silicosis and HIV among artisanal and small-scale miners. Multi-sectoral and innovative interventions are required to stem this triple epidemic in Zimbabwe.