

### A Tuberculosis Outbreak in A Township of Eastern Taiwan, 2017

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#### Abstract

In January 2017, a temporary workers of tunnel engineering in a township of eastern Taiwan was diagnosed as tuberculosis (TB) through community screening. Of seven confirmed TB cases identified subsequently, cases 1, 5, and 6 were coworkers and sharing with the same strain type, thus an outbreak of tuberculosis in the township was confirmed. Among 72 contacts, 18 (25%) had a positive reaction with Latent Tuberculosis Infection (LTBI) test. Because of the high infectivity and long infectious period of case 1, we compared 12 isolates from cases 1, 2, 4, and 7 (3 isolates from 2008, 2014, and 2018 respectively) and other four confirmed cases from the township (cases A–D, reported between 2013 and 2016). The results showed that these were of the same strain except one isolate from case 7 collected in 2007. Six features were found in this outbreak investigation: 1) the index case was highly infectious, 2) the case had not receive TB screening before the event, 3) temporary workers, 4) economic disadvantages, 5) inadequate ventilation in residence, and 6) having newborns in the same household. In addition to enhancing health education and actively detecting high-risk subjects, collaboration of public health authorities, medical institutions, and social welfare systems are essential to implement TB control policies and to tackle cases' economic and health issues, thereby stopping the epidemic.

**Keywords:** Tuberculosis outbreak, temporary workers, newborns, economic disadvantage

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