

## Cost Effectiveness Analysis of Chest Radiograph Screening in Central Taiwan, 2008-2012

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### Abstract

The Taiwan's first chest radiograph mobile screening tour began in 1949 at Chiayi TB prevention hospital. The X-ray screening subjects changed from the entire community in the early years to the current target groups. Although the chest radiograph screening policy in Taiwan has already reached 60 years in operation, the related studies on cost effectiveness analysis are extremely few.

We collected the tour screening data from January 2008 to December 2012, included the number of persons checked and number of cases discovered. Using online public data, we also searched for TB cases confirmed in central Taiwan region and central mountainous region from 2008 to 2012. We collected the costs for the X-ray mobile van, the fees for taking and reading the X-rays, personnel expenses for the drivers and radiologists, travel fees, and the records for machine maintenance and gasoline fee for each month; and obtained the cost for each tour per person and each confirmed case.

The average tours for the X-ray mobile van in the central region each year is 191 trips, with an average number of 43,133 persons checked each year. The highest average number of screenings is in correctional facilities, followed by mountainous villages. The discovery rate of confirmed TB cases are the highest in mountainous villages (178.2/100,000), followed by correctional facilities (106.5/100,000). The cases discovered on tours during the time period take up 1.82% of the total cases; among which the cases discovered in mountainous villages take up 15.64% of all cases found in mountainous villages. The average screening cost per person is 129.7 NTD, with an average cost of 122,646.78 NTD per confirmed TB case.

This preliminary study on cost effectiveness analysis provides the cost effectiveness data for radiograph screening, which may assist in future in-depth studies for the cost effectiveness analysis of Taiwan's TB screening operations.

**Key words:** tuberculosis (TB), X-ray screening tour, cost effectiveness

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