ANALYSIS OF THE DECISION PARADIGM OF
THE TB DIAGNOSTIC COMMITTEE
USING LOGLINEAR MODELS AND CLASSIFICATION TREES

By

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ABSTRACT

The TB Diagnostic Committees (TBDC) evaluate cases of pulmonary tuberculosis (PTB) symptomatics who are smear-negative, but whose chest x-rays show lesions suggestive of tuberculosis that may warrant anti-TB treatment. In a review of the TBDC referral forms of new patients who consulted at Manila district health centers from 2006 to 2008, the demographic and clinical characteristics associated with a positive chest x-ray and eventually leading to a diagnosis of new active PTB are identified using loglinear models and classification trees.

Hemoptysis is the most important variable in differentiating a TBDC decision of active PTB from non-PTB. The final loglinear model signifies that history of alcoholic beverage drinking, hemoptysis, weight loss, and age less than 40 are individually associated with a TBDC diagnosis of active PTB. Sex is used as the root node variable in the classification tree in order to improve classification accuracy and explore sex-related factor differences. In females, hemoptysis, alcoholic beverage drinking history, and age are individually associated with the target variable; while interactions among predictors of a diagnosis of active PTB are more demonstrable in males. The TBDC may find useful the proposed classification tree model as a decision tool in making a diagnosis of active pulmonary tuberculosis in support of the chest radiograph.

Keywords: TBDC, Loglinear model, Classification tree, Sputum smear-negative PTB