Gler, MTG, Maramba, EKS, Quelapio, MID, Johnson, J, Boom, H and Tupasi, TE, "Prediction model of bacillary disease among smear-negative PTB cases in a high TB, low HIV prevalence country," *The International Journal of Tuberculosis and Lung Disease*, Vol. 10, No. 11, (November) 2006, Supplement 1: S253.

Background: To reduce transmission, treatment of smear-positive pulmonary Tb (PTB) is the highest priority of National TB Programs. However, molecular epidemiologic studies show that 18% of new cases are transmitted from smear-negative individuals, making early treatment of these patients imperative.

Objective: To evaluate a predictor model for bacillary PTB in sputum smear-negative PTB suspects.

Materials and methods: Case- control study of risk factors for bacillary PTB in sputum- smear negative PTB suspects. Cases are patients with sputum smear-negative culture confirmed PTB and controls are sputum culture- negative patients with symptoms and/or radiographic findings consistent with PTB. Risk ratios of the demographic and clinical features in 416 sputum smear- negative patients seen consecutively between January 2004 to December 2005 were evaluated.

Results: 128 (31%) patients had culture- confirmed PTB. On multivariate analysis, duration of symptoms for more than 14 days (OR=3.3%,95%CI= 1.1-10.5), CXR finding of lesions in 1 or more lung zones (OR=6.8,95%CI=3.4- 13.6) and male gender (OR=1.7,95%CI= 1.03- 2.7) were independently predictive of bacillary PTB. A threshold cumulative score of 6 was most discriminatory for culture- confirmed PTB (sensitivity=72.4% specificity=69.3%) based on a receiver operator characteristics (ROC) curve.

Conclusion: The culture- positivity predictor model is an objective tool in deciding whether to treat sputum- smear negative PTB suspects.