

**A COST EFFECTIVENESS ANALYSIS OF PULMONARY  
TUBERCULOSIS CASE FINDING STRATEGIES  
AMONG HIGH RISK COMMUNITIES IN KAMPALA**

**By**

**ANTHONY SSEBAGEREKA**

**2014/HD07/927U**

**A DISSERTATION SUBMITTED TO MAKERERE  
UNIVERSITY SCHOOL OF PUBLIC HEALTH IN  
PARTIAL FULFILLMENT OF THE REQUIREMENTS  
FOR THE AWARD OF A DEGREE OF MASTER OF  
HEALTH SERVICES RESEARCH.**

**January, 2017**

## **Abstract**

**Introduction:** Tuberculosis (TB) is still a major global health risk and Sub-Saharan Africa carries the greatest TB burden. Prompt identification and treatment of new TB cases are important in TB control. To improve TB case notification and reduce the burden of disease among high-risk communities, active case finding strategies especially Household Contact Investigation (HCI) and Enhanced Case Finding (ECF) have been proposed. This is because Passive Case Finding (PCF) alone is insufficient in high-risk communities. Taking the societal perspective, this study focused on assessing the cost-effectiveness of the PCF+ECF+HCI combination compared to exclusive PCF for identification of TB cases among high-risk communities in Kampala.

**Methods:** Data on the costs and yield of TB cases for exclusive PCF and a combination of PCF+ECF+HCI, was collected. Data on costs was collected using Ingredient's approach. A short patient survey was done to establish patient-associated costs. The cost of implementing the PCF+ECF+HCI combination was compared with that of PCF alone. At analysis, costs for both strategies were converted and adjusted to US\$ for the annual average of the year 2015. The incremental cost-effectiveness ratio (ICER) was calculated and compared with the GDP per Capita to make a decision on whether a strategy is cost-effective or not. One-way and two-way sensitivity analysis was done to assess the uncertainty around parameters values.

**Results:** 4,755 pulmonary TB cases from 12,298 presumptive TB cases were identified by PCF alone. The PCF+ECF+HCI combination yielded 5,120 cases from 12,915 presumptive cases. Average cost per patient was found to be US\$50.4 for PCF as compared to US\$276.12 for PCF+HCI+ECF. The ICER comparing PCF+ECF+HCI to PCF was US\$29.52 per TB case identified. In addition, none of the strategies dominated the other. The model was generally stable across varying parameter estimates. However, for one-way sensitivity analysis, the ICER was most sensitive to the number of presumptive TB cases, costs of facilitation, allowances and transportation, while at bivariate analysis, it was most sensitive to costs of community mobilization and number of TB cases identified.

**Conclusion:** PCF+ECF+HCI is more costly and also has a marginally higher yield of TB cases than PCF alone, but is a cost-effective strategy. However, in settings with minimal resources, PCF+ECF+HCI can just provide a marginal benefit with much higher cost implications.