

Cost-Utility Analysis of Colorectal Cancer Screening in the Philippines

Implementing Agency: EpiMetrics, Inc.

Cooperating Agency: Philippine Council for Health Research and Development & Philippine Health Insurance Corporation

TECHNICAL ABSTRACT

Background: The Philippine Health Insurance Corporation (PhilHealth) requested the implementing agency to conduct a cost-utility analysis (CUA) and budget impact analysis (BIA) of colorectal cancer (CRC) screening to determine the feasibility of offering a screening benefit package.

Objective: To conduct cost-utility analysis and budget impact analysis of colorectal cancer screening strategies among a target population in the Philippines.

Design: Decision analysis using discrete event microsimulation (DES) model was used to simulate four screening interventions.

Data Sources: Derived from literature and primary data collection

Target Population: Philippine average-risk 50-year old population and older

Perspective: Payer, i.e. the Philippine Health Insurance Corporation

Time Horizon: Lifetime for cost-utility analysis and 1 year for budget impact analysis

Interventions: (1) Guaiac-Fecal occult blood test (gFOBT) followed by colonoscopy every 10 years, (2) fecal immunochemical test (FIT) followed by colonoscopy every 10 years, (3) flexible sigmoidoscopy every 5 years and colonoscopy screening every 10 years. These interventions were all compared to no screening.

Outcome Measures: Quality-adjusted life years (QALYs) gained

Results of Base Case Analysis: All screening modalities were very cost effective considering the incremental cost-effective ratios (ICERs) fall below the 1 GDP per capita threshold of the World Health Organization (WHO). In terms of budget impact, the cheapest strategies were g-FOBT followed by colonoscopy every 10 years, and FIT followed by colonoscopy every 10 years, costing Php 9 Billion each.

Results of Sensitivity Analysis: One-way sensitivity analysis was conducted for cost, compliance, and accuracy of the screening test. Results show that the ICERs of all the screening modalities evaluated remained below the 1 GDP Per Capita. Assuming low compliance, g-FOBT followed by colonoscopy every 10 years, and FIT followed by colonoscopy every 10 years may cost as low as Php 250M-350M each.

Limitations: Local input parameters and epidemiological data were not available thus all parameters, except costs and overall prevalence of CRC, were taken from international literature.

Conclusion: PhilHealth may introduce a benefit package for outpatient screening of colorectal cancer using the screening modality of Annual FIT + colonoscopy. This strategy has an ICER of 6,024.66, which is well below the WHO recommendation of below 1 GDP per capita threshold. This strategy has a

budget impact of Php 350M in the first year assuming low compliance but the budget can be as high as Php 1B for the first year assuming moderate compliance.

Researchers would like to note that from the DES model, results have shown that gFOBT + colonoscopy is the most cost-effective strategy, however the strategy FIT + colonoscopy is recommended for a number of reasons such as an increase in QALYs, its specificity and accuracy, and its convenience as compared with gFOBT.