World Academy of Science, Engineering and Technology
International Journal of Medical and Health Sciences
Vol:19, No:07, 2025

Budget Impact Different Approaches of Colorectal Cancer Screening Using iFOBT in Malaysia

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Abstract : Colorectal cancer (CRC) ranks among the leading causes of incidence and mortality globally, including in Malaysia. Despite the availability of multiple screening modalities that have proven effective in saving lives and improving survival rates, most patients present at a late stage. The World Health Organization (WHO) recommends large-scale population screening due to its effectiveness and cost-efficiency. This study aims to evaluate the budget impact of implementing cohort and community-based approaches for CRC screening. A budget impact analysis was conducted following the ISPOR Task Force guidelines, projecting a 5-year expenditure for each screening strategy. All relevant costs for the intervention approaches are from the provider's perspective. Calculation of costs incurred for risk stratification of the eligible population, awareness and health education, CRC screening using iFOBT, diagnostic colonoscopy, patient navigation, consultation for positive iFOBT test participants, and referral for further management if CRC was diagnosed was done using a cost calculator programmed in Microsoft Excel, following the costing template produced by the National Institute for Health and Care Excellence in the UK. The current CRC screening strategy in Malaysia costs USD11,489,983.73 to detect 2,478 CRC cases in the first year, with a 176% increase in costs over 5 years. The Malaysian Cohort (TMC) CRC Screening Programme is projected to cost USD34,476,768.86 for detecting 13,557 cases in the first year, with a 34% increase over 5 years. The community intervention approach is estimated to cost USD54,890,417.02 for detecting 6,735 CRC cases in the first year, with a 78% increase over 5 years. The budget impact is highly sensitive to CRC screening uptake. The analysis reveals that implementing the cohort and community intervention approaches would incur costs 3 times and 4.7 times higher, respectively, compared to the current strategy. Assuming consistent costs for screening, iFOBT positive rates, and detection rates, the cohort approach requires USD2,542.76 to detect one CRC case, while the current approach costs USD4,636.55 per case. This suggests that the cohort approach is more affordable. A larger-scale screening programme would increase the number of early-stage CRC detection, ultimately reducing the need for treatment.

Keywords : BIA, cancer screening, CRC, economic evaluation, iFOBT
Conference Title : ICHPH 2025 : International Conference on Healthcare and Public Health
Conference Location : Toronto, Canada
Conference Dates : July 24-25, 2025