

MODELLING THE IMPACTS OF COLORECTAL CANCER SCREENING IN CANADA USING POHEM

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ABSTRACT

Introduction: Colorectal cancer (CRC) is the second cause of cancer deaths in Canada. Randomized controlled trials (RCT) have shown the efficacy of screening using faecal occult blood tests (FOBT). A comprehensive evaluation of the costs and consequences of colorectal cancer screening for the Canadian population is required before implementation of such a program. **Methods:** Statistics Canada's Population Health microsimulation Model was updated to incorporate a comprehensive CRC screening module based on Canadian data and RCT efficacy results. The module incorporated sensitivity and specificity of FOBT and colonoscopy, participation rates, incidence, staging, diagnostic and therapeutic options, disease progression, mortality and direct health care costs for different screening scenarios. Reproducing the mortality reduction observed in the Funen screening trial validated the model. **Results:** A biennial screening program with a 67% participation rate offered to individuals aged 50-74 years of age, was estimated to produce a 16.7 % reduction in CRC 10-year mortality for the cohort of Canadians subjected to screening in the year 2000. The lifetime benefit of CRC screening was estimated to result in an overall increase in life expectancy of 0.04 years (15 days) (undiscounted). The average annual cost over a 25-year period was estimated at \$112 million (discounted at 5%). The cost effectiveness was estimated to be \$11,907 per life year gained (discounted at 5%). **Conclusions:** CRC screening appears cost-effective under all the scenarios considered. The results of these simulations will be provided to the Canadian National Committee on Colorectal Cancer Screening to help formulate national policy recommendations for CRC screening.

REFERENCE

Flanagan, W., Le Petit, C., Berthelot, J.-M., White, K.J., Coombs, B.A., Jones-McLean, E. Potential Impact of Population-based Colorectal Cancer Screening in Canada. *Chronic Dis. Can.* 2003; 24 (4) in press.

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