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Cost-effectiveness of colorectal cancer screening: comparison of community-based flexible sigmoidoscopy with fecal occult blood testing and colonoscopy.

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BACKGROUND AND AIMS: To determine the cost-effectiveness of screening for colorectal cancer using flexible sigmoidoscopy once every 10 years, compared with annual and biennial rehydrated Hemoccult fecal occult blood testing and colonoscopy once every 10 years, or no screening. **METHODS:** A Markov model was developed in order to simulate the progression of a cohort of asymptomatic, average-risk individuals aged 55-64 years who were moving through a defined series of states towards death. The main outcome measures were: cases of colorectal cancer averted, colorectal cancer deaths averted, and cost per life-year saved. **RESULTS:** Colonoscopy averted the greatest number of cases of colorectal cancer (35%), followed by flexible sigmoidoscopy (25%), and annual (24%) and biennial (14%) fecal occult blood testing. Colonoscopy averted the greatest number of deaths from colorectal cancer (31%), followed by annual fecal occult blood testing (29%), flexible sigmoidoscopy (21%) and biennial fecal occult blood testing (19%). Flexible sigmoidoscopy was the most efficient in terms of cost per life-year saved (16,801 Australian dollars), followed by colonoscopy (19,285 Australian dollars), biennial (41,183 Australian dollars), and annual (46,900 Australian dollars) fecal occult blood testing. **CONCLUSIONS:** Flexible sigmoidoscopy and colonoscopy are cost-effective strategies for reducing the disease burden of colorectal cancer.