Re: Improving the Cost-Effectiveness of Colorectal Cancer Screening

In an earlier issue of the Journal, we showed that sigmoidoscopy screening for colorectal cancer might result in net cost savings under expert-based assumptions (1). Although savings start to exceed costs after 22 years, it takes about 45 years for a continuing screening program to be compensated by savings before all costs. A screening program that terminates after 30 years will achieve net cost savings at 35 years after the start of the program. As Atkin et al. (2) point out, health planners tend not to be so farsighted and the technologies for treating and screening for colorectal cancer will most likely improve in future decades. Thus, the sigmoidoscopy program may be replaced by an alternative screening program within 30 years. Fig. 1 shows what happens if the sigmoidoscopy screening program is abandoned after 10 years or 20 years. A 10-year screening program will achieve net cost savings in the 19th year after the start of screening, while a 20-year screening program needs 27 years to achieve net cost savings. If a sigmoidoscopy screening were to be replaced within a decade or two by other technologies, the point where cumulative costs are completely compensated by the cumulative savings of sigmoidoscopy screening will be reached with a lag of several years. Thus, while organizations that are considering the economic implications of this kind of screening program still need to think in terms of a relatively long time horizon, this problem is perhaps less daunting than implied by our initial analysis.

Costs and savings can also be calculated from the private perspective of a typical U.S. health maintenance organization (HMO), assuming that around 40% of the HMO participants aged 50–75 years will no longer be enrolled within 10 years. The costs of sigmoidoscopy screening for the participants no longer enrolled in an HMO are paid by the HMO, but the savings will not accrue to the HMO. That means that sigmoidoscopy screening will probably not result in net cost savings from the perspective of the HMO. However, our model also expects favorable health effects from sigmoidoscopy screening, and the decision to screen should be based on a favorable balance between health effects and the costs of screening rather than solely on a cost analysis.

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Fig. 1. Net costs for a program of sigmoidoscopy-based colorectal cancer screening. Dotted vertical lines show number of years before induced savings equal costs. — — — — = net total costs of a sigmoidoscopy screening program that terminates after 10 years. — — — — = net total costs of a sigmoidoscopy screening program that terminates after 20 years.
REFERENCES


NOTES

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