life gained and net cost of $55.6 million for a DCBE every 5 years. The cost-effectiveness ratio for FSIG is $11,622, compared with $12,197 for DCBE.[7]

CONCLUSIONS

All of the screening strategies reviewed by OTA offer health benefits at a "price" that is well below the benchmark value -- roughly $40,000 per added year of life -- commonly applied to preventive technologies. Only screening CSCPY is more costly, and then only under high-cost assumptions.

A lifetime schedule of colorectal cancer screening beginning at age 50 requires a net lifetime investment whose present value is roughly $400 to $1300 per person entering the screening program, depending on both the polyp dwell time and the specific screening strategy adopted. Strategies involving either FSIG or DCBE alone require a lifetime investment whose present value is between $400 and $700 per person screened. For that investment, the population would reap gains in life expectancy on the order of roughly 1 week to 1 month per person screened. Although this gain in statistical life expectancy appears small, in the real world, the benefits would be concentrated in the roughly 6 percent of 50-year-old Americans who, in the absence of screening, are destined to suffer from colorectal cancer at some time in their life.

Thus, if OTA's model is a reasonable approximation of the natural history of CRC and the accuracy and costs of the screening interventions, the implications for CRC screening guidelines are clear: CRC screening in average-risk adults beginning at age 50 is a relatively good investment for society.

[7] Detailed results for every strategy are included as an appendix to this paper.

Much more difficult is the choice among alternative screening strategies. OTA's analysis suggests that strategies involving either FSIG or DCBE (but not both) are comparable with one another and are more cost-effective than other strategies. Whether the screening interval should be long or short is unclear, however, because much depends on the distribution of speeds with which polyps destined to become cancer progress through the precancerous polyp stage. FOBT may also be competitive with these two strategies if it does deliver a sensitivity equal to that seen in the Minnesota FOBT clinical trial.

This analysis did not address the acceptability of the alternative technologies to the individuals who would undergo screening. All of the screening tests are uncomfortable or unpleasant to one degree or another, and people's attitudes about the acceptability of different tests surely vary. Public policy makers should consider the practical implications of limiting the screening technologies offered to the public both for the rational organization of screening programs and for rates of participation.

Finally, the accuracy or safety of some CRC screening technologies may vary widely with the details of program organization or operator competence. OTA's analysis does not consider the costs of promoting quality assurance in CRC screening. These issues need to be addressed both by policy makers and program developers if CRC screening is to deliver the major health benefits so clearly indicated by recent clinical evidence and by OTA's cost-effectiveness analysis.