

4. Persons to be screened are given adequate face-to-face instruction on the performance of the test and diet.
5. Persons to be screened are questioned about the presence of signs or symptoms of colorectal cancer; those with signs or symptoms should be referred for a more intensive evaluation.
6. Adequate provisions are made for the reporting of results and followup of persons with positive tests.
7. There is adequate recordkeeping.

It is difficult, if not impossible, to sort out all the factors that influence any decision, and there is no way to document the precise impact that formal CEA has had on colon cancer screening policies. It is important to recognize that the current policies, at the national, local, and individual level, are all the result of some sort of "CEA." Any time an administrator, physician, or patient makes a decision about a screening test, he or she is weighing its costs and benefits. The distinction is that the vast majority of these "analyses" are very informal, taking place in the minds of the decisionmakers.

Thus, the use of CEA to evaluate screening for colon cancer is not new in concept; it is new

only by being more formal and explicit. The rationale for the use of more formal CEA is that, given the immense complexity involved in analyzing screening problems, and given the inherent limitations of the human mind, a more systematic approach might help improve the quality of the decisions. On this logic, several organizations such as the Blue Cross/Blue Shield Association, ACS, the International Symposium for Colorectal Cancer, the National Commission for Digestive Diseases, and NCI have solicited cost-effectiveness information.

But in the end, after all the analysts, professors, administrators, and experts have spoken, the final CEA, the one that counts, is performed by physicians and patients. It is difficult to state what effect formal CEAS will have on these individuals' policies. As yet, the results have not had time to filter down. But if CEAS influence the policy makers in Washington, Chicago, and New York, they eventually should influence, if not control, the behavior of practitioners and patients.

## REFERENCES

1. American Cancer Society, "American Cancer Society: Cancer Statistics, 1979" (New York: ACS, 1979).
2. Axtell, L. M., et al. (eds.), "Cancer Patient Survival," report No. 5, DHEW publication No. (NIH) 77-992 (Bethesda, Md.: National Cancer Institute, 1976).
3. Berci, G., et al., "Complications of Colonoscopy and Polypectomy: Report of the Southern California Society for Gastrointestinal Endoscopy," *Gastroenterology* 67:584, 1974.
4. Copeland, M. M., and Rawson, R. W., "Summary and Recommendations of the Workshop on Colon Cancer," *Cancer* 33 (suppl.):1747, 1974.
5. Dales, L. G., et al., "Evaluating Periodic Multiphasic Health Checkups: A Controlled Trial," *Chron. Dis.* 32:385, 1979.
6. Eddy, D. M., *Screening for Cancer: Theory, Analysis and Design* (Englewood Cliffs, N. J.: Prentice-Hall, Inc., 1980).
7. Gallup Omnibus, "A Survey Concerning Cigarette Smoking, Health Check-Ups, Cancer Detection Tests: A Summary of the Findings," GO 7695 T, survey conducted for the American Cancer Society by Gallup Organization, Inc., New York, January 1977.
8. Geenen, J. E., et al., "Major Complications of Colonoscopy: Bleeding and Perforation," *Amer. J. Dig. Dis.* 20:231, 1975.
9. Gilbertsen, V. A., "University of Minnesota Colon Cancer Control Study Progress Report, End Year 4.0" contract No. NO1-CB-53862, June 30, 1979.
10. ———, "University of Minnesota Program in Screening With Fecal Blood Testing and With Sigmoidoscopy," paper presented at the International Symposium on Colorectal Cancer, New York, March 1979.
11. ———, "Proctosigmoidoscopy and Polypectomy 'in Reducing the Incidence of Rectal Cancer,'" *Cancer* 34(suppl.):936, 1974.

12. Gnauck, R., "World Health Organization Criteria for Screening and Results of German National Effort," paper presented at the International Symposium on Colorectal Cancer, New York, March 1979.
13. Greegor, D. H., "Detection of Silent Colon Cancer in Routine Examination," *Cancer* 19:330, 1969.
14. \_\_\_\_\_ "Diagnosis of Large-Bowel Cancer in the Asymptomatic Patient," *J. A.M.A.* 201(12): 123, 1967.
15. \_\_\_\_\_ "Occult Blood Testing for Detection of Asymptomatic Colon Cancer," *Cancer* 28(1): 131, 1971.
16. \_\_\_\_\_ "A Progress Report: Detection of Colorectal Cancer Using Guaiac Slides," *Cancer* 22(6):360, 1972.
17. Helfrich, G. B., "Public Screening With Fecal Occult Blood Testing," paper presented at the International Symposium on Colorectal Cancer, New York, March 1979.
18. Hertz, R. E. L., "Screening for Colorectal Cancer," paper presented at the International Symposium on Colorectal Cancer, New York, March 1979.
19. Hertz, R. E. L., et al., "Value of Periodic Examinations in Detecting Cancer of the Rectum and Colon," *Postgr. Med.* 27:290, 1960.
20. Kay, S. W., SmithKline Diagnostics, Sunnyvale, Calif., personal communication, 1979.
21. Kiser, J. L., et al., "Colon Perforations Occurring During Sigmoidoscopic Examinations and Barium Enemas," *Mo. Med.* 65:969, 1968.
22. Levin, D. L., et al., *Cancer Rates and Risks*, HEW publication No. (NIH) 79:691, 2d ed. (Bethesda, Md.: National Institutes of Health, 1974).
23. Lieberman Research, Inc., *A Basic Study of Public Attitudes Toward Cancer and Cancer Tests*, Highlights, study conducted for the American Cancer Society, New York, May 1979.
24. National Center for Health Statistics, "Current Estimates From the Health Interview Survey: United States, 1977," in *Vital and Health Statistics*, series 10, No. 126 (Hyattsville, Md.: NCHS, 1977).
25. Ostrow, J. D., et al., "Sensitivity and Reproducibility of Chemical Tests for Fecal Occult Blood," paper presented at 53d Annual Meeting of the American College of Physicians, Atlantic City, N. J., April 1972.
26. \_\_\_\_\_ "Sensitivity and Reproducibility of Chemical Tests for Fecal Occult Blood With an Emphasis on False-Positive Reactions," *Am. J. Dig. Dis.* 18:930, 1973.
27. "Regular Screening Would Reduce Cancer of Colon and Rectum Toll," *J. A.M.A.* 234(2):137, 1975.
28. Rogers, B. H. G., et al., "Complications of Flexible Fiberoptic Colonoscopy and Polypectomy," *Gastroin. En.* 22:73, 1975.
29. Swinton, N. R., cited in R. J. Bolt, "Sigmoidoscopy in Detection and Diagnosis in the Asymptomatic Individual," *Cancer* 28:121, 1971.
30. Welch, C. E., and Hedberg, S. E., *Polypoid Lesions of the Gastrointestinal Tract*, 2d ed. (Philadelphia: W. B. Saunders Co., 1975).
31. Winawer, S. J., "Results of a Screening Program for the Detection of Early Colon Cancer and Polyps Using Fecal Occult Blood Testing," *Gastroenterology* 72 /1-127:1150, 1977.
32. \_\_\_\_\_ "Validity of Screening for Colorectal Cancer:" paper presented at the International Symposium on Colorectal Cancer, New York, March 1979.