Cutting Cost and Increasing Access to Colorectal Cancer Screening: Another Approach to Following the Guidelines

Judith A. Fisher,1 Christopher Fikry,3 and Andrea B. Troxel2
Departments of 1Family Practice and Community Medicine and 2Biostatistics and Epidemiology, University of Pennsylvania, School of Medicine, Philadelphia, Pennsylvania; and 3The Boston Consulting Group, New York, New York.

Abstract

Context: Through medical decision making, physicians in the U.S. influence the spending of >$1.3 trillion or 15% of the gross domestic product. U.S. physicians are challenged to identify areas of clinical practice to improve while cutting cost and increasing access. Primary screening for colorectal cancer is a good example to illustrate this point.

Objective: To apply a population-based method of medical decision making in the area of primary screening for colorectal cancer in order to illustrate a reduction in health care costs while increasing access and maintaining quality of care.

Design: We used a combination of (a) census population data, (b) National Cancer Institute Survey data on screening rates, and (c) charge data to estimate the current costs of colorectal cancer screening. We also estimated cost and capacity increases that would occur under various other screening scenarios. These included all currently screened subjects receiving annual fecal occult blood testing (FOBT), all currently unscreened individuals undergoing either colonoscopy every decade or annual FOBT, and all eligible subjects undergoing annual FOBT.

Main outcome measures: Cost and access differences between current screening activity and other potential scenarios compliant with guidelines.

Results: Screening for colorectal cancer with yearly, six-window, rehydrated FOBT for all normal-risk individuals over the age of 50 has the potential to screen 3,813,095 more Americans for colon cancer yearly than are currently being screened, while costing $8.7 billion less per decade than what is currently being spent on screening a fraction of the population. Looking into the future, it is possible to increase screening rates from 50% to 100%, while saving almost $10 billion per decade by using FOBT for all eligible Americans. In practice, some proportion of these benefits would be realized as the calculations assume a 100% patient compliance rate.

Conclusions: Considering a population-based approach and the balance among quality, accessibility, and cost parameters, we recommend primary screening for colorectal cancer to be based on yearly six-window, rehydrated FOBT. Colonoscopy due to cost and access issues should be relegated to secondary screening and case finding. (Cancer Epidemiol Biomarkers Prev 2006;15(1):108–13)

Introduction

Through medical decision making, physicians in the U.S. influence the spending of >$1.3 trillion or 15% of the gross domestic product (1, 2). Insurers are interested in cutting the costs of medical care. Recently, Fischer and Avorn advocated an evidence-based approach to the care of hypertension that would save $1.2 billion nationally per year (3). They challenged us to look at health care in the U.S. and identify areas of clinical practice to improve while cutting costs. The Institute of Medicine and others are interested in addressing health care disparities in this country. This article uses the recommendations regarding primary screening for colorectal cancer to cut costs as well as increase access to care.

In his book Medicine’s Dilemmas—Infinite Needs versus Finite Resources, Kissick proposes a model of medical decision making which is driven by an appropriate balance among quality, access, and cost parameters (4). He refers to this as the “iron triangle of health care” (Fig. 1). Using his paradigm, Kissick tends a “population-based, resource-managed” approach as an alternative to an “individual-preference, limitless-resource” approach to medical decision making.

Received 3/20/05; revised 7/21/05; accepted 10/25/05.

The costs of publication of this article were defrayed in part by the payment of page charges. This article must therefore be hereby marked advertisement in accordance with 18 U.S.C.

Section 1734 solely to indicate this fact.

Requests for reprints: Judith A. Fisher, Department of Family Practice and Community Medicine, University of Pennsylvania, School of Medicine, 6th Floor Mutch Building, 39th and Market Streets, Philadelphia, PA 19104. Phone: 215-265-9601; Fax: 215-243-3290.
E-mail: Judith.Fisher@uphs.upenn.edu
Copyright © 2006 American Association for Cancer Research.

doi:10.1158/1055-9965.EPI-05-0198


Copyright © 2006 American Association for Cancer Research. cebp.aacrjournals.org Downloaded from on June 9, 2017. © 2006 American Association for Cancer Research.
(http://www.aha.org/aha/index.jsp) for screening recommendations, estimates of morbidity and mortality rates, cost-effectiveness data, and capacity estimates. We collected population statistics from the 2002 U.S. Census Bureau and the Centers for Disease Control. To supplement this data, we interviewed faculty at the Leonard Davis Institute of Health Economics at the Wharton School of the University of Pennsylvania and representatives from Aetna and the University of Pennsylvania Health System. Interview findings were specifically used to identify institution-specific cost and compliance data in order to confirm findings from our initial literature search.

**Data Analysis.** In preliminary analyses, we considered the quality, access, and cost parameters (defined below) of existing primary screening modalities for colorectal cancer. Two options came to the forefront in our analysis. Colonoscopy is considered the gold standard in terms of quality. In his editorial “Colonoscopy: as good as gold?” David Leiberman writes: “In gastroenterology, it has been the foregone conclusion that colonoscopy can provide the most accurate examination for the colon, and it is the gold standard against which we judge other tests” (21). Others note that colonoscopy incurs great expense and has limited access (22). Fecal occult blood testing (FOBT) is inexpensive and widely accessible, but many question its diagnostic quality. For these reasons, we use these two options to illustrate the tradeoffs when making population-based decisions.

As a proxy for quality of the screening method, we assessed sensitivity and specificity data. We estimated accessibility using data on need (individuals to be screened in a decade) and supply (number of colonoscopies that could be done during the same decade). We calculated the need for colorectal cancer screening using the 2002 U.S. Census data in conjunction with screening guidelines defined by the U.S. Preventive Services Task Force, the American Cancer Society, and the American Gastroenterology Association; we considered both individuals currently targeted for screening (50-74 years of age) and individuals entering the screening window over the next decade (currently 40-49 years of age). We adjusted both population samples to account for the mortality from all causes as well as the current utilization of either endoscopy or FOBT (23). Screening utilization rates, published by the American Cancer Society, are not separated by type of endoscopy (sigmoidoscopy or colonoscopy). In determining the amount of screening colonoscopies or FOBT required per decade, we assumed that all eligible persons ages 50 to 74 would undergo one screening colonoscopy in a decade or annual FOBT in the same period. Our projections also assumed that 100% of the population entering the screening window would receive one screening colonoscopy or begin yearly FOBT. We determined estimated current capacity for colonoscopy by determining the potential number of gastroenterologists, general surgeons, and primary care physicians available to perform colonoscopy along with the number of colonoscopies that each physician could perform. Both estimates were obtained from the National Cancer Institute Survey of Colorectal Cancer Screening Practices (24). These calculations are outlined in Table 4. Due to the simplicity of administering FOBT and the low

---

**Table 1. List of terms and definitions**

<table>
<thead>
<tr>
<th>Terms</th>
<th>Definitions</th>
</tr>
</thead>
<tbody>
<tr>
<td>Primary screening</td>
<td>First line of health service in which members of a defined population, who do not necessarily perceive they are at risk of a disease or its complications, are asked a question or offered a test, to identify those individuals who are more likely to be helped than harmed by further tests or treatment</td>
</tr>
<tr>
<td>Normal risk for colon cancer</td>
<td>Persons with no personal or family history of colorectal cancer and personal or family history of adenomatous polyps prior to age 40 and personal or family history of oligopolyposis personal history of ulcerative colitis ≥ years Personal history of adenomatous polyps symptoms of bloody stool, change in caliber of stool or stool habit, undiagnosed/ unintentional weight loss or fatigue</td>
</tr>
<tr>
<td>Secondary screening</td>
<td>A health service where individuals who have already had a disease are re-tested for the disease. The purpose of secondary screening is to reverse or slow the progression and/or improve the morbidity and mortality statistics for the disease</td>
</tr>
<tr>
<td>Case finding</td>
<td>A health service where an individual has a positive screening test and the specific cause is sought</td>
</tr>
</tbody>
</table>

---

**Figure 1. Framework for considering screening protocols.**

---

**Figure 1.** Framework for considering screening protocols.
Overhead required to analyze these tests, we did not perform separate calculations for the increase in FOBT capacity required. We believe the existing health system infrastructure can absorb the increased need for FOBT.

We determined the cost of colorectal cancer screening methods by using current charges as a proxy for direct costs; charge data is less susceptible to cost accounting manipulation (25). Table 5 delineates the 2000 U.S. median charge for a colonoscopy. Indirect costs were considered but not quantified.

**Results**

Sensitivity and specificity data are presented in the first column of Table 6 and are used as a proxy for quality assessment. Screening colonoscopy is 95% sensitive for colorectal cancer but no specificity data exists. FOBTs have a sensitivity of 30% to 92% for colorectal cancer and a specificity of 90% to 99%; the sensitivity can be as low as 30% for a single FOBT but increases to 92% with annual repeat testing and use of six-window, rehydrated samples (26-28), the paradigm which we consider here.

Access data is presented in the third column of Table 6. Currently, 1.6 million screening colonoscopies are done annually (22). With this in mind, if all eligible normal-risk individuals living in the U.S. not currently being screened for colorectal cancer were to receive colonoscopies, the additional number of procedures required per year would be 3,813,095. Given the current number of procedures done, current capacity would need to be increased by 336% (Table 6). If all normal-risk, currently unscreened individuals were to receive annual FOBT, the additional number of tests per decade would be 38,130,950.

Charge data is presented in the second column of Table 6, unadjusted for inflation. The mean total charge for a colonoscopy nationwide is $1,700 (7). The nationwide cost of a single FOBT is estimated to be $15. Adding overhead costs for development and reporting, the estimated per test charge is $38 (ref. 8; $380 per person per decade). To adjust for the ~9% of FOBTs that are positive and require further evaluation with endoscopy, we use an adjusted charge of $1,285 per subject per decade. This assumes that subjects with a positive FOBT who undergo colonoscopy exit the screening population, either because disease is found or because of a negative colonoscopy, after which they do not return to screening for another 10 years. The cost of colonoscopy per 1,000 subjects screened ($1,656,000) is ~30% higher than that same cost for FOBT ($1,285,000). The costs associated with various scenarios are presented in Table 7: (a) the current costs of colorectal cancer screening, (b) the estimated costs if all those currently being screened were to use colonoscopy once each decade, (c) the estimated costs if all those currently being screened were to use annual FOBT, (d) the estimated costs of current screening combined with all unscreened individuals receiving colonoscopy, (e) the estimated costs of current screening combined

<table>
<thead>
<tr>
<th>Method</th>
<th>Direct and indirect evidence provided</th>
</tr>
</thead>
<tbody>
<tr>
<td>Annual FOBT</td>
<td>Three randomized controlled trials all concluding that biennial FOBT reduces mortality rates Mandel et al. (10) Hardcastle et al. (11) Kronborg et al. (12)</td>
</tr>
<tr>
<td>Colonoscopy every decade</td>
<td>The ability of colonoscopy to prevent colorectal cancer cases or mortality has not been measured in a screening trial National Polyp Study concludes that colon cancers could be prevented by routine colonoscopies Winawer et al. (13) Patients with colon cancer less likely to have had a colonoscopy in the past Muller and Sonnenberg (14)</td>
</tr>
</tbody>
</table>


<table>
<thead>
<tr>
<th>Screening of adults over the age of 50</th>
<th>American Gastroenterology Association [ref. (24); choose one of five protocols]</th>
<th>American Cancer Society [ref. (24); choose one of five protocols]</th>
</tr>
</thead>
<tbody>
<tr>
<td>Good evidence that periodic FOBT reduces mortality¹</td>
<td>(a) yearly FOBT (no rehydration) (b) flexible sigmoidoscopy every 5 years (c) yearly FOBT plus flexible sigmoidoscopy every 5 years (preferred method) (d) double contrast barium enema every 5 years (e) colonoscopy every 10 years combined testing is preferred over either annual FOBT, or flexible sigmoidoscopy every 5 years alone</td>
<td>(a) yearly FOBT (b) flexible sigmoidoscopy every 5 years (c) yearly FOBT plus flexible sigmoidoscopy every 5 years (preferred method) (d) double contrast barium enema every 5 years (e) colonoscopy every 10 years combined testing is preferred over either annual FOBT, or flexible sigmoidoscopy every 5 years alone</td>
</tr>
<tr>
<td>Fair evidence that sigmoidoscopy alone or in combination with FOBT reduces mortality¹</td>
<td>(c) yearly FOBT plus flexible sigmoidoscopy every 5 years (preferred method)</td>
<td>(c) yearly FOBT plus flexible sigmoidoscopy every 5 years (preferred method)</td>
</tr>
<tr>
<td>No direct evidence that double contrast barium enema reduces mortality</td>
<td>(d) double contrast barium enema every 5 years (e) colonoscopy every 10 years combined testing is preferred over either annual FOBT, or flexible sigmoidoscopy every 5 years alone</td>
<td>(d) double contrast barium enema every 5 years (e) colonoscopy every 10 years combined testing is preferred over either annual FOBT, or flexible sigmoidoscopy every 5 years alone</td>
</tr>
</tbody>
</table>

¹Good evidence—includes consistent results from well-designed, well-conducted studies in representative populations that directly assess effects on health outcomes.

¹Fair evidence—sufficient to determine effects on health outcomes, but the strength of the evidence is limited by the number, quality, or consistency of the individual studies, generalizability to routine practice, or indirect nature of the evidence on health outcomes.

Cancer Epidemiol Biomarkers Prev 2006;15(1). January 2006
Downloaded from cebp.aacrjournals.org on June 9, 2017. © 2006 American Association for Cancer Research.
with all unscreened individuals receiving FOBT, (f) the estimated costs if all eligible individuals were to receive colonoscopy, and (g) the estimated costs if all eligible individuals were to receive FOBT. Estimation of current costs assumes that all procedures are charged at the level of colonoscopies, and uses estimates of screening rates with endoscopy and FOBT obtained from a National Cancer Institute Survey (22); similar estimates are reported elsewhere (29). These estimates include the cost of follow-up colonoscopies required for positive FOBT. If all currently unscreened individuals in the normal-risk group were screened for colorectal cancer with colonoscopy, the total additional cost would be $6,314,484,511 over the decade. If all currently unscreened individuals in the normal-risk group were screened yearly for colorectal cancer in the next decade using FOBT, the total additional cost would be $4,899,826,447. Use of FOBT in place of colonoscopy in currently unscreened individuals could save up to $1.4 billion ($1,414,658,064) each decade. If all eligible individuals were screened with FOBT rather than colonoscopy, the savings would be ~$8.7 billion per decade.

**Discussion**

We agree with Fischer and Avorn (3) that a closer look at health care in the U.S. allows us to identify areas of clinical practice that are amenable to improvement in access while cutting cost and upholding quality. We use the recommendations regarding primary screening for colorectal cancer to illustrate this point. According to our calculations, using yearly FOBT for all currently unscreened normal-risk individuals has the potential to screen 3,813,095 more Americans, for $1.4 billion fewer dollars. Looking into the next decade, we could increase screening rates from 50% to 100% while saving almost $9 billion by using FOBT for all Americans within the screening window.

### Table 4. Outline of calculations

<table>
<thead>
<tr>
<th>Type</th>
<th>Gastroenterology</th>
<th>General surgery</th>
<th>Primary care</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>No. of physicians</td>
<td>7,835</td>
<td>15,181</td>
<td>156,605</td>
<td>179,621</td>
</tr>
<tr>
<td>No. of screening colonoscopies per year</td>
<td>1,071,000</td>
<td>535,000</td>
<td>9,100</td>
<td>1,615,100</td>
</tr>
</tbody>
</table>

Estimated needed capacity increase

1. Population ages 40 to 74: 106,182,349
2. No. of expected deaths per year: 8,613,346
3. Mortality-adjusted population (line 2-line 1): 97,569,003
4. No. of subjects currently screened per decade: 38,130,945
5. Additional screening colonoscopies per decade (line 3-line 4): 38,130,945
6. Additional screening colonoscopies per year: 3,813,095
7. Current no. of screening colonoscopies per year: 1,615,100
8. Total capacity: 5,428,195
9. Increase (%): 336

### Table 5. Estimated costs associated with screening methods

<table>
<thead>
<tr>
<th>Colonoscopy</th>
<th>FOB T</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mean charges*</td>
<td>Mean charges</td>
</tr>
<tr>
<td>Facility fees</td>
<td>FOBT cards</td>
</tr>
<tr>
<td>Operating room</td>
<td></td>
</tr>
<tr>
<td>Lab</td>
<td></td>
</tr>
<tr>
<td>Radiology</td>
<td></td>
</tr>
<tr>
<td>Pharmacy</td>
<td></td>
</tr>
<tr>
<td>Medical supplies</td>
<td></td>
</tr>
<tr>
<td>Other</td>
<td></td>
</tr>
<tr>
<td>Physician fees</td>
<td></td>
</tr>
<tr>
<td>Estimated direct costs</td>
<td>$1,656</td>
</tr>
<tr>
<td>Indirect costs</td>
<td></td>
</tr>
<tr>
<td>Patient preparation time</td>
<td></td>
</tr>
<tr>
<td>Loss of productivity during preparation and recovery</td>
<td></td>
</tr>
<tr>
<td>Requires assistance of another person postprocedure</td>
<td></td>
</tr>
<tr>
<td>Pain and discomfort associated with endoscopy</td>
<td></td>
</tr>
<tr>
<td>Additional fees</td>
<td>These include the actual costs of medical personnel and supplies to provide the service as well as overhead costs, such as administration, charting, and automated information systems (17)</td>
</tr>
<tr>
<td>Estimated indirect costs</td>
<td>Estimated indirect costs</td>
</tr>
</tbody>
</table>

Table 6. Summary of evidence

<table>
<thead>
<tr>
<th>Quality</th>
<th>Cost</th>
<th>Access</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Sensitivity/specifcity</td>
<td>Reduction in colorectal cancer deaths</td>
</tr>
<tr>
<td>FOBT</td>
<td>30% to 92% sensitivity, 90% to 99% specificity</td>
<td>No studies to quantify; significant indirect evidence</td>
</tr>
<tr>
<td>Colonoscopy</td>
<td>95% sensitivity, specificity undefined</td>
<td>No studies to quantify; significant indirect evidence</td>
</tr>
</tbody>
</table>

*Range in sensitivity due to test type (rehydrated/nonrehydrated, guaiac-based, immunochemical-based), frequency of exams (annual, biennial).

1Reduction in cancer deaths based on study using repeated annual tests.


3The larger adjusted cost reflects the cost of colonoscopies required for positive FOBT, averaged over the decade per subject.

We evaluated the current recommendations of the U.S. Preventive Services Task Force, American Gastroenterology Association, and American Cancer Society then developed a more definitive recommendation for colorectal cancer screening. Our recommendation is based on the premise that medical decision making by both individual clinicians and policy makers should be population-based, and consider the appropriate balance among quality, access, and cost parameters. The health care budget is limited; it is critical to select tests and treatments that are highly sensitive and specific yet cost-effective and easily available. Rosson and Spiro from Yale agree in their letter to the editor of the Annals of Internal Medicine (February 18, 2003) when they write: "The rush to universal colonoscopic screening of standard-risk patients was encouraged by various celebrities who gave the issue well-intentioned but in our opinion misguided publicity. As a result, it has become difficult for patients who really need colonoscopy to get it expeditiously" (30). The data suggest that a larger percentage of the population could be screened, resulting in decreased morbidity and mortality in the U.S., if physicians adopt the use of annual FOBT for primary colorectal cancer screening.

The following observations concerning quality, access, and cost are important to note. As for quality, the argument is frequently made that colonoscopy is a superior test in light of the higher sensitivity. Proper annual use of a six-window, rehydrated FOBT results in a sensitivity of 92%, approaching that of screening colonoscopy (18, 19). Additional benefits to FOBT include reduction of complication rates, rapid results, minimal need for bowel preparation and fewer indirect costs. The official recommendations of all medical societies draw no distinctions between annual FOBT and colonoscopy every 10 years.

As for access, setting aside the cost and quality arguments, the availability of screening colonoscopies is limited and geographically determined. Despite the fact that nearly 50% of normal-risk patients forego any type of screening, our current system is straining to offer screening colonoscopies in a timely manner to patients (5). This problem is given particularly significant in rural communities where wait times can approach 1 year; even in well-served urban populations wait times can reach 6 to 8 months (31). Access would be increased if FOBT cards were made available through pharmacists, nurses, health fairs, etc. (venues capable of distributing, developing and reporting results). Church et al. provide an example of home mailing of FOBT cards that significantly increased use (32).

Cost projections for screening the relevant adult population suggest a difference in price between screening colonoscopy and FOBT of two orders of magnitude. Current spending on colonoscopy screening is $2.7 billion (1.6 million exams at an average cost of $1,700; ref. 7) and results in coverage of <50% of the target population. Here, we estimate that coverage of 100% of the target population using FOBT would cost half of what is currently spent on screening colonoscopies alone.

In conclusion, our data suggests that a larger percentage of the U.S. population could be screened if physicians adopt the use of annual FOBT for primary colorectal cancer screening.

To reach these conclusions, we made the following assumptions: (a) the size of the U.S. population age 50 and over is equivalent to that reported in the 2002 U.S. census; (b) the currently screened subjects and the currently unscreened subjects receive colonoscopy once each decade.

Table 7. Costs per decade of possible screening scenarios compared with current costs

<table>
<thead>
<tr>
<th>Scenario</th>
<th>Cost per decade (in billions)</th>
<th>Change in cost per decade (in billions)</th>
<th>Required increase in colonoscopy capacity</th>
</tr>
</thead>
<tbody>
<tr>
<td>Current</td>
<td>$90.0</td>
<td>N/A</td>
<td>N/A</td>
</tr>
<tr>
<td>All current screenees get colonoscopy</td>
<td>$98.4</td>
<td>+$8.4</td>
<td>1,507%</td>
</tr>
<tr>
<td>All current screenees get FOBT</td>
<td>$76.4</td>
<td>−$13.6</td>
<td>0%</td>
</tr>
<tr>
<td>Current + colonoscopy for unscreened</td>
<td>$96.3</td>
<td>+$6.3</td>
<td>336%</td>
</tr>
<tr>
<td>Current + FOBT for unscreened</td>
<td>$94.9</td>
<td>+$4.9</td>
<td>0%</td>
</tr>
<tr>
<td>Colonoscopy for all</td>
<td>$104.7</td>
<td>+$14.8</td>
<td>1,743%</td>
</tr>
<tr>
<td>FOBT for all</td>
<td>$81.3</td>
<td>−$8.7</td>
<td>0%</td>
</tr>
</tbody>
</table>

*Approximately 24% of the target population is screened with yearly FOBT, and ~37% of the target population is screened with endoscopy, for a total of 61% of eligible individuals screened.

1All 61% of eligible individuals currently being screened receive colonoscopy once each decade.

2All 61% of eligible individuals currently being screened receive annual FOBT.

3The currently screened subjects are unchanged, whereas all currently unscreened subjects receive colonoscopy once each decade.

4The currently screened subjects are unchanged, whereas all currently unscreened subjects receive annual FOBT.

5Both the currently screened subjects and the currently unscreened subjects receive colonoscopy once each decade.
using FOBT as a primary screening method allows colonoscopy to be used secondarily for positive FOBT results (i.e., case finding for non–cancerous polyps, cancerous growths, diverticuli, arterial-venous malformations, etc.); (c) screening colonoscopy decreases the morbidity and mortality for colorectal cancers (based on secondary data as primary data exists only for FOBT); (d) current capacity is directly estimated by the National Cancer Institute Survey data of present day screening volume; and (e) charge is a good proxy for cost (payment is also a proxy for cost, but varies widely by region and payor source).

Some limitations should also be noted. We considered other factors, but were unable to adjust our estimates as insufficient data exists. These include: (a) our calculations for access are limited by service availability; in practice, patient adherence may also limit access; (b) differences in quality as measured by sensitivity and specificity might vary according to the skills of the provider, quality of the equipment used, timing of procedure, and effectiveness of preparation; and (c) current screening rates may not be accurately reported. We considered only colonoscopy and FOBT as primary screening methods because other methods have significant drawbacks; this may limit our final recommendation. No hard specificity data exists for colonoscopy, but many feel it is highly specific for adenomas, which could make colonoscopy a more attractive option; we note, however, that only a small percentage of adenomas will progress to cancer, perhaps reducing the utility of this approach. Finally, the issue of patient adherence to either screening modality is important. Some patients may avoid colonoscopy due to the invasive nature of the procedure and the preparation required; on the other hand, other patients may prefer colonoscopy over FOBT because it is viewed as more advanced medical technology. Previous trials have shown initial adherence with a FOBT screening program between the range of 40% to 75% accompanied by a subsequent decline of several percentage points per year (33). However, it should also be noted that patient adherence to any colorectal cancer screening program is generally poor at ~30% to 40% (34). Whatever screening protocol is proposed, patient education and public information campaigns will be crucial in promoting awareness and adherence. Although all of these issues are important, we believe that our analysis is robust and leads to recommending FOBT for primary colorectal cancer screening in normal-risk individuals >50 years old in the U.S.

Conclusion

Physicians are stewards of a large sector of the U.S. economy. Due to limited resources, their medical decisions must decrease health care expenditures while increasing access and maintaining the quality of health care for all patients. The consideration of quality, access, and cost in medical decision making creates a healthy tension to drive medical decision making. We agree that individual clinicians and policy makers must approach medical decision making from a population-based and not an individual, geographic, or local resource-based perspective. The case of colorectal cancer screening provides a clear example of how this change in perspective could result in a decrease in morbidity and mortality while simultaneously improving accessibility and reducing cost.

References


Cutting Cost and Increasing Access to Colorectal Cancer Screening: Another Approach to Following the Guidelines

Judith A. Fisher, Christopher Fikry and Andrea B. Troxel


Updated version
Access the most recent version of this article at:
http://cebp.aacrjournals.org/content/15/1/108

Cited articles
This article cites 26 articles, 1 of which you can access for free at:
http://cebp.aacrjournals.org/content/15/1/108.full.html#ref-list-1

Citing articles
This article has been cited by 8 HighWire-hosted articles. Access the articles at:
/content/15/1/108.full.html#related-urls

E-mail alerts
Sign up to receive free email-alerts related to this article or journal.

Reprints and Subscriptions
To order reprints of this article or to subscribe to the journal, contact the AACR Publications Department at pubs@aacr.org.

Permissions
To request permission to re-use all or part of this article, contact the AACR Publications Department at permissions@aacr.org.