

Direct Observation of Counseling on Colorectal Cancer in Rural Primary Care Practices

Edward F. Ellerbeck, MD, Kimberly K. Engelman, PhD, Joe Gladden, MD, Michael C. Mosier, PhD, G. S. Raju, MD, Jasjit S. Ahluwalia, MD

To better understand colorectal cancer (CRC) screening practices in primary care, medical students directly observed physician-patient encounters in 38 physician offices. CRC was discussed with 14% of patients ≥ 50 years of age; 87% of discussions were initiated by the physician. The rate of discussions varied among the practices from 0% to 41% of office visits. Discussions were more common for new patient visits, with younger patients, and in the 24% of offices that utilized flow sheets. The frequency of CRC discussions in physician offices varies widely. More widespread implementation of simple office systems, such as flow sheets, is needed to improve CRC screening rates.

KEY WORDS: colorectal cancer; counseling; primary care physicians; reminder systems; patient education; rural communities.

J GEN INTERN MED 2001;16:697-700.

Although screening reduces colorectal cancer (CRC) mortality,¹ little is known about how this aspect of preventive care is incorporated into medical practice. Most data on CRC screening has been derived from patient surveys,² physician self-reports,³ or chart reviews.⁴ Few investigators have examined this issue by directly observing cancer screening activities during physician-patient encounters.⁵ Direct observation of physician-patient encounters would eliminate many problems encountered in surveys, including patient or physician recall errors.⁶

In order to describe physician activities related to CRC and identify physician and office characteristics that support CRC screening efforts, medical students directly observed physician-patient interactions for CRC discus-

sions and identified office resources that could facilitate screening.

METHODS

We identified 38 primary care physicians in Kansas who agreed to precept students for an 8-week summer elective. All physicians agreed to have students record data on health promotion activities in their office. The majority (89%) of these physicians' practices were in nonmetropolitan areas. Medical students who had successfully completed their first year of medical school underwent formal training in collecting research data during the first week of the elective. During the next 6 weeks, students worked with their assigned physician and collected data on physician-patient encounters. Students e-mailed weekly reports of research activities to the study coordinator. Students participated in debriefing during the final week.

Students collected data on all physician-patient encounters with patients ≥ 50 years of age seen during normal office hours. We excluded encounters from data collection if the office visit was for a critical acute complaint or procedure, if the patient appeared to be in immediate emotional distress or suffered from dementia, if there were language difficulties that precluded observation of counseling behaviors, or if the student was not present for the entire visit. The University of Kansas Medical Center Human Subjects Committee approved the protocol.

Students recorded observations on preprinted cards, including the age and gender of the patient, whether the patient was new to the practice, whether CRC was discussed, and who initiated the discussion (patient or physician).

We conducted a postvisit survey with a subsample of patients 1 to 3 days after the office visit. This subsample consisted of smokers identified during the office visit who were being surveyed for a concurrent study.⁷ In the survey, we asked all patients ≥ 50 years of age if they had discussed fecal occult blood testing in the past year or a sigmoidoscopy during the past five years with their physician. The questions were derived from the Behavioral Risk Factor Surveillance System survey.⁸ During the final week in the practice, students conducted an assessment of office resources available for CRC and administered a brief survey to the physicians.

Received from the Department of Preventive Medicine (EFE, KKE, MCM, JSA), Department of Internal Medicine (EFE, GSR, JSA), and Department of Family Medicine (JG), University of Kansas School of Medicine, Kansas City, Kan; and the Kansas Cancer Institute (JSA) Kansas City, Kan.

The findings of this study were presented at the 23rd Annual Meeting of the Society of General Internal Medicine, May 4, 2000.

Address correspondence and requests for reprints to Dr. Ellerbeck: University of Kansas Medical Center, 3901 Rainbow Blvd., Kansas City KS 66160-7313 (e-mail: eellerbe@kumc.edu).

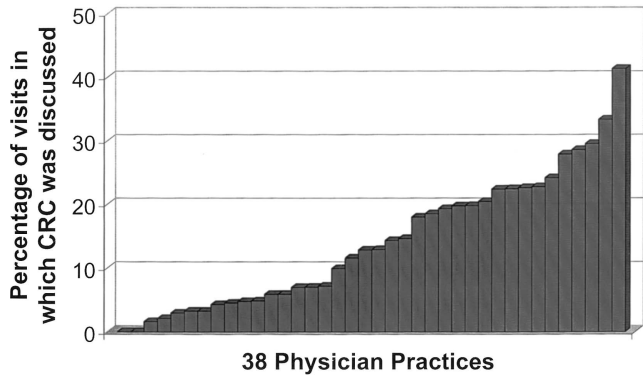


FIGURE 1. Variation in the frequency of colorectal cancer (CRC) discussions among 38 office practices.

The primary outcome of interest was whether CRC was discussed during physician-patient observations. We examined bivariate relationships between the outcome and characteristics of the patient, the physician, and the physician’s office. When examining the significance of associations between the outcome and physician or office characteristics, we used logistic regression with generalized estimating equations to account for the clustering of observations within physician practices. Those factors that were significant at the $\alpha = 0.05$ level were tested for inclusion in the final model, as were all two-way interactions. All analyses were conducted using SAS version 6.12 (SAS Institute, Cary, NC).

RESULTS

The mean age of the 38 physicians was 45, with an average of 11 years in practice; 76% were male. CRC education materials were present in 23 (61%) of the 38 practices while flow sheets with a CRC screening prompt were used in 9 (24%) of the offices.

We completed observations on 2,480 physician encounters (28 to 105 observations per practice). Encounters in which the physician-patient relationship had already been established comprised 2,382 (97%) of the visits. The mean age of the patients was 71 years (range 50 to 99); 63% were female. CRC was discussed during 344 (14%) visits, with 299 (87%) of these discussions initiated by the physician. The rate at which CRC was discussed varied among the 38 practices from 0% to 41% (median = 13%) (Figure 1). In two practices, CRC discussions were never witnessed.

Of the office factors examined, flow sheets used to record CRC screening status were significantly associated with CRC discussion ($P = .01$) (Table 1). There was no relationship between CRC discussion and physician characteristics, such as gender or number of years in practice. CRC discussions were more likely to occur with patients <75 years of age (odds ratio [OR], 1.51; $P = .001$) and during visits with new patients (OR, 2.71; $P = .001$).

In a multivariable, logistic regression model, the frequency of CRC discussion was positively associated with new patient visits (OR, 2.57; confidence interval [CI], 1.5 to 4.4; $P < .001$), the use of flow sheets (OR, 1.76; CI, 1.1 to 2.7; $P = .01$), and with patients 50 to 74 years old (compared to those 75 years of age or older) (OR, 1.47; CI, 1.2 to 1.9; $P = .002$).

We completed postvisit surveys on 104 of the patients, 52 (50%) of whom reported that they had not previously discussed either fecal occult blood testing during the past year or sigmoidoscopy during the past five years with their physician. Of these 52 patients, CRC discussions had been observed during 5 (10%) of the visits with their physician.

DISCUSSION

Our study showed striking variations between practices in the frequency of CRC discussions. CRC discussions were rare occurrences in some practices but were

Table 1. Factors Associated with Discussion of Colorectal Cancer (CRC) during Routine Office Visits with 2,480 Patients Aged 50 or Older

Factor	Visits with Factor Present, n (%)	Rate of CRC Discussion		Odds Ratio*	95% CI for Odds Ratio	P Value*
		Factor Present, %	Factor Absent, %			
Office factors						
Flowsheets	619 (26)	18	12	1.74	1.12 to 2.70	.014
Patient education material	1,555 (63)	16	11	1.63	0.93 to 2.86	.089
Physician factors						
Female	524 (21)	18	13	1.24	0.67 to 2.31	.499
>10 yrs in practice	1,823 (74)	13	16	0.83	0.47 to 1.46	.521
Patient factors						
Female	1,523 (62)	14	14	0.89	0.71 to 1.12	.328
Age 50–74†	1,014 (41)	12	16	1.51	1.18 to 1.93	.001
New patient	66 (3)	30	13	2.71	1.59 to 4.62	.001

* Odds ratios and P values from logistic regression model adjusted for clustering of physician practices.

† Compared to patients aged ≥ 75 years.

CI, confidence interval.

incorporated in up to 41% of visits in other practices. Although we do not know what the CRC screening experience was for most of these patients prior to their office visit, data from our postvisit survey suggest that half of these patients were overdue for counseling on CRC screening, and discussions of CRC screening would have been appropriate during the office visit. Furthermore, the widespread variations we observed in CRC discussions suggest that this is a fertile area for quality improvement.⁹

The responsibility for initiating CRC discussion appears to lie with physicians. In our study, patients rarely initiated discussions of CRC screening. Many patients do not know their risk for CRC¹⁰ or the benefits of screening,¹¹ and physician encouragement can substantially increase CRC screening.²

Leaders in preventive care have recommended that physicians utilize flow sheets or implement alternative reminder systems to promote better delivery of preventive care.^{12,13} Although many physicians report that they utilize flow sheets to track preventive services,¹⁴ there is little data on how often CRC screening is included in these office reminder systems. Our study shows that reminder systems for CRC screening are underutilized.

Our study revealed a significant increase in CRC discussions in physicians' offices that utilized flow sheets. Previous studies on the use of flow sheets to improve CRC screening have shown mixed results, and almost all were randomized clinical trials of quality improvement strategies.¹⁵⁻¹⁸ Our study is the first study of community practices that had not completed external quality improvement programs to examine the relationship between flow sheets and completion of colorectal cancer screening. Although these data provide support for recommendations that these reminder systems should be more widely utilized,^{12,13} we cannot exclude the possibility that the flow sheets are simply a marker for physicians who are more committed to preventive care.

A potential limitation of this study is that the observer presence could have influenced the frequency or content of the CRC discussions. However, if present, this observational influence would likely diminish over time; we saw no differences in CRC discussion rates as the study progressed. In addition, this study did not allow examination of the content of the CRC discussion. Capturing these data would require audio- or videotapes of physician-patient encounters. Modest sample sizes may also have precluded identifying potentially significant relationships with increased CRC discussions. Finally, the CRC screening practices of these volunteer physicians may not be representative of practice by the average physician; however, the proportion of patients reporting CRC screening in our follow-up telephone survey was remarkably similar to population-based survey data in Kansas.⁸

Physicians vary widely in the frequency with which they discuss CRC with their patients. Although used in a minority of practices, flow sheets are associated with more frequent discussions of CRC. Because patients rarely initiate discus-

sions of CRC screening, physicians need to implement reminder systems to increase CRC screening in their offices.

We would like to acknowledge and thank all the physicians who not only provided a valuable learning experience for the students but also allowed the data collection necessary for this project.

Partial funding for this project was provided through the following grants: The Robert Wood Johnson Foundation Generalist Physicians Faculty Scholars award (#032686, J. S. Ahluwalia); Kansas Academy of Family Physicians (J. Gladden); J. H. Baker Trust of La Crosse, Kansas (J. Gladden); Kansas Association for Medically Underserved (J. Gladden); and Primary Care Physician Education grant from the Kansas Health Foundation.

REFERENCES

1. Sonnenberg A, Delco F, Inadomi JM. Cost-effectiveness of colonoscopy screening for colorectal cancer. *Ann Intern Med.* 2000; 133:573-84.
2. Mandelson MT, Curry SJ, Anderson LA, et al. Colorectal cancer screening participation by older women. *Am J Prev Med.* 2000; 19:149-54.
3. Schwartz JS, Lewis CE, Clancy C, Kinosian MS, Radany MH, Koplan JP. Internists practices in health promotion and disease prevention: a survey. *Arch Intern Med.* 1991;114:46-53.
4. Ruffin MT, Gorenflo DW, Woodman B. Predictors of screening for breast, cervical, colorectal, and prostatic cancer among community-based primary care practices. *J Am Board Fam Pract.* 2000;13: 1-10.
5. Stange KC, Zyzanski SJ, Jaen CR, et al. Illuminating the 'Black Box': A description of 4454 patient visits to 138 family physicians. *J Fam Pract.* 1998;46:377-89.
6. Stange K, Zyzanski SJ, Smith TF, et al. How valid are medical records and patient questionnaires for physician profiling and health services research? A comparison with direct observation of patient visits. *Med Care.* 1998;36:851-67.
7. Ellerbeck EF, Ahluwalia JS, Jolicoeur DG, Gladden J, Mosier MC. Direct observation of smoking cessation activities in primary care practice. *J Fam Pract.* 2001;50:688-93.
8. From the Centers for Disease Control and Prevention. Trends in screening for colorectal cancer—United States, 1997 and 1999. *JAMA.* 2001;285:1570-1.
9. Weiner JP, Parente ST, Garnick GW, Fowles J, Lawthers AG, Palmer H. Variation in office-based quality: a claims-based profile of care provided to Medicare patients with diabetes. *JAMA.* 1995;273:1503-8.
10. Lipkus IM, Rimer BK, Lyna PR, Pradhan AA, Conaway M, Woods-Powell CT. Colorectal screening patterns and perceptions of risk among African-American users of a community health center. *J Community Health.* 1996;21:409-27.
11. Beeker C, Kraft JM, Southwell BG, Jorgensen CM. Colorectal cancer screening in older men and women: qualitative findings and implications for intervention. *J Community Health.* 2000;25:263-78.
12. Department of Health and Human Services, Public Health Service, Office of Disease Prevention and Health Promotion. Put Prevention into Practice Education and Action Kit. Washington, DC: Government Printing Office; 1994.
13. Leininger LS, Finn L, Dickey L, et al. An office system for organizing preventive services: A report by the American Cancer Society Advisory Group on Preventive Health Care Reminder Systems. *Arch Fam Med.* 1996;5:105-15.
14. Dickey LL, Kamerow DB. Primary care physicians' use of office resources in the provision of preventive care. *Arch Fam Med.* 1996; 5:399-404.

15. Dietrich AJ, Tobin JN, Sox CH, et al. Cancer early-detection services in community health centers for the underserved. A randomized controlled trial. *Arch Fam Med*. 1998;7:320-7.
16. Dietrich AJ, O'Connor GT, Keller A, Carney PA, Levy D, Whaley FS. Cancer: Improving early detection and prevention. A community practice randomized trial. *Brit J Med*. 1992;304:687-684.
17. Belcher DW. Implementing preventive services. *Arch Intern Med*. 1990;150:2533-41.
18. Manfredi C, Czaja R, Freels S, Trubitt M, Warnecke R, Lacey L. Prescribe for health: improving cancer screening in physician practices serving low-income and minority populations. *Arch Fam Med*. 1998;7:329-37.



YOU'RE INVITED TO VISIT
The SGIM Website
Portal & Pathway
to Professional Effectiveness & Satisfaction
offering
Knowledge – Networking - Career Development
Featuring links to resources & tools
including meetings, publications, job listings, funding
sources, Residency & Fellowship directories, government
agencies,
& search engines
Located at <http://www.sгим.org>