Published in final edited form as:
Patient Educ Couns. 2007 April ; 66(1): 43–50. doi:10.1016/j.pec.2006.10.003.

Physician colorectal cancer screening recommendations: An examination based on informed decision making☆

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Abstract

Objective—The purpose of this research was to examine the content of physicians' colorectal cancer screening recommendations. More specifically, using the framework of informed decision making synthesized by Braddock and colleagues, we conducted a qualitative study of the content of recommendations to describe how physicians are currently presenting this information to patients.

Methods—We conducted semi-structured interviews with 65 primary care physicians. We analyzed responses to a question designed to elicit how the physicians typically communicate their recommendation.

Results—Almost all of the physicians (98.5%) addressed the "nature of decision" element. A majority of physicians discussed "uncertainties associated with the decision" (67.7%). Fewer physicians covered "the patient's role in decision making" (33.8%), "risks and benefits" (16.9%), "alternatives" (10.8%), "assessment of patient understanding" (6.2%), or "exploration of patient's preferences" (1.5%).

Conclusion—We propose that the content of the colorectal screening recommendation is a critical determinant to whether a patient undergoes screening. Our examination of physician recommendations yielded mixed results, and the deficiencies identified opportunities for improvement.

Practice implications—We suggest primary care physicians clarify that screening is meant for those who are asymptotic, present tangible and intangible benefits and risks, as well as make a primary recommendation, and, if needed, a "compromise" recommendation, in order to increase screening utilization.

Keywords

Decision making; Screening; Colorectal cancer; Patient–provider interaction; Qualitative methods; Preventive care

☆For more information on the Reflective Practice section please see: Hatem D, Rider EA. Sharing stories: narrative medicine in an evidence-based world. Patient Education and Counseling 2004;54:251–253.

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1. Introduction

Colorectal cancer is the second leading cause of neoplasm-related deaths in the United States, taking approximately 60,000 lives annually [1–3]. It is estimated that as many as 30,000 lives could be saved each year through early detection of the disease [2]. However, only 37% of colorectal cancers are detected prior to metastasis, due in part to low rates of screening for the disease [3].

Although colorectal screening recommendations have been disseminated widely in the media and scientific journals for years, screening utilization is still extremely low [4–6]. According to a study performed by the Centers for Disease Control and Prevention (CDC), only 20.6% of those over age 50 reported completing fecal occult blood test (FOBT) screening within the last year, and only 33.6% reported ever having undergone a flexible sigmoidoscopy or colonoscopy. The CDC study also found significant regional differences in screening rates. For example, the rates for Kentucky – which is ranked eight among the United States in terms of colorectal cancer deaths – were only 17.6% and 25.8%, respectively [7].

Previous research has identified patient barriers to colorectal cancer screening. These factors include lack of information about the disease and screening methods, negative attitudes toward screening preparation and procedures, and perceptions of low level of risk for the disease [4,8–14]. In addition, several studies have indicated the importance of the recommendation of a physician in influencing a patient's colorectal cancer screening decision [15–18]. While the importance of a physician recommendation has been widely reported, it has been suggested that merely mentioning colorectal cancer screening is not enough to motivate all patients to be screened [16,19,20]. To date, an optimal approach for making colorectal screening recommendations has not been forwarded. More fundamentally, current approaches to making colorectal cancer screening recommendations have not been examined and documented.

A direct observational study by Ellerbeck et al. [21] found wide variation between primary care practices in the frequency of CRC screening discussion. The purpose of this research was to examine the content of physicians' colorectal cancer screening recommendations. More specifically, building on the framework of informed decision making defined by Braddock et al. [22], we conducted a qualitative study of the content of recommendations in order to describe how physicians present this information to patients.

1.1. The framework of informed decision making

The nature of the standard dialogue between a physician and a patient has evolved over time. In Classical Greece, the patient's involvement was considered counter productive to the medical intervention [23]. And until recently, the physician took a paternal, as opposed to partnership, role. The introduction of the "Ethical Considerations Associated with Informed Consent" statement by a committee on ethics in 1980 emphasized the significance of a meaningful communication between a physician and a patient rather than "unidirectional, dutiful disclosure of alternatives, risk and benefits" of a medical action [22,24]. Today, the patient's autonomy is almost universally recognized, and the physician–patient's dialogue is often characterized as "informed and shared decision making" (ISDM). ISDM, a concept introduced in 1990, is a process of an ongoing information exchange between physician and patient, allowing both interacting parties to develop and agree upon medical care. One outcome of the ISDM process is informed consent, provided by the patient.

"Informed consent" can be defined as an ethical and legal acceptance by the patient of a medical action proposed by the physician, reflecting the patient's awareness and understanding of his or her condition and consequences, as well as the patient's willingness to voluntarily undertake the agreed upon intervention (or its avoidance) in regard to all the risks and benefits this acceptance (or avoidance) may entail. "Informed decision making" is an expansion of this concept with emphasis on the meaningful exchange of information between provider and patient [22].

Drawing from classical definitions of informed consent, Braddock et al. [22] proposed a seven criteria definition of informed decision making. The first criterion of informed decision making involves discussing the patient's role in decision making. Another aspect is the discussion of the clinical issue or nature of the decision. This element involves coverage of the basic information – when, what, who, where, why, and how aspects – of the decision at hand. An example from the current study would involve a physician discussing colorectal cancer screening in the context with other preventive health issues in order to inform the patient about the procedure generally, and in relation to other potential more familiar procedures. Another example would involve detailing the age criteria of the screening guidelines (for instance, "It is usually recommended that people at the age of 50 have colon cancer screening."). Additional elements of informed decision making include discussion of reasonable alternatives, discussion of the process and cons of the alternatives, discussion of the uncertainties associated with the decision, assessment of patient's understanding, and exploration of patient preference.

2. Methods

We conducted semi-structured interviews with primary care physicians. Each interview lasted approximately one half hour and was completed at a mutually agreeable location. Each informant was asked to read and sign a consent form prior to the interview. The interviewer also asked the informants for permission to audiotape the interview. Approval to conduct the study was obtained from the Institutional Review Board at the University of Kentucky (#03-0079-P1B).

2.1. Recruitment and interview protocol

Physicians were recruited by the physician members of the research team. Efforts were made to recruit physicians from different types of practices. Toward that end, physicians were recruited from two academic practices (University of Kentucky and University of Cincinnati), one large multi-specialty clinic (The Lexington Clinic, Lexington, Kentucky), and from several private practices (in and around Lexington, Kentucky). Once a physician agreed to participate in the study, a member of the research team contacted the physician to schedule a time for the interview. Physicians, practicing in Lexington, Kentucky, where the research team was based, were given an option of doing the interview in-person. However, most of the interviews were conducted over the telephone.

During the interview, we asked the physicians about the screening methods they recommend, how they obtain information about colon cancer screening, and the factors they think patients consider when deciding whether to undergo screening or not. Although we analyzed the responses to each question, the present analysis was based solely on the response to one specific question: "Please pretend I am a patient for whom you have decided to recommend CRC screening. How would you present the idea to me?"

2.2. Data coding and analysis

Each audiotape was transcribed verbatim. The initial phase of this data analysis involved creating a subset of data including the response to the question under examination. One

member of the research team reviewed the responses and identified key content through a preliminary open-coding activity. A different member of the team drew from the construct of informed decision making and developed an independent set of codes. To establish the final codes, these two researchers and the principal investigator reviewed the potential codes and developed a coding scheme using the Braddock et al. framework of informed decision making. The coding scheme and illustrative quotations are presented in Table 1.

A code sheet was developed using the aforementioned coding scheme. The code sheet also included an "other" category to capture any additional factors. Two researchers independently read through and coded the data. Coding results were compared and a third coder examined any inconsistent coding. The code sheet data as well as physician characteristics were entered into Microsoft Excel. We used Stata Intercooled Version 9.2 for Windows to develop sample descriptions and conduct statistical analyses.

3. Results

We interviewed a total of 65 primary care physicians. Transcribed responses to the interview question ranged in length from 37 to 858 words with a mean of 234 words.

3.1. Sample description

The respondents were recruited from academic clinics (50.8%) and from community clinics (52.3%), with two physicians practicing in both areas. A majority of physicians were male (67.7%), white, non-Hispanic (93.9%). The median participant was 41 years old, with the youngest respondent being 29 years old and the oldest one being 64. The sample was split between physicians board certified in internal medicine (60.0%) and family practice (40.0%). The sample had been practicing medicine for an average of 13.9 years (range: 3–30 years), and in the current setting for an average of 8.0 years (range: 0.25–30 years). The number of patients consulted per week ranged from 10 to 200 (average 71). Table 2 displays the complete sample description.

3.2. Content of physician recommendation

Most of the physicians (77.3%) self-reported following clinical guidelines for CRC screening. Key criteria utilized to determine to whom to recommend screening included patient age (e.g. age 50), family history of CRC, patient life expectancy, symptoms, and health insurance coverage. There were six types of distinct recommendations – fecal occult blood testing (FOBT), flexible sigmoidoscopy, FOBT and flexible sigmoidoscopy, colonoscopy, FOBT and colonoscopy, or FOBT and double contrast barium enema. The screening alternatives most frequently recommended were colonoscopy and FOBT.

3.3. Completeness of informed decision making

Utilizing the "other" category, the researchers coded five factors not originally specified on the code sheet. Although not directly linked to the framework of informed decision making, these factors help illustrate how physicians make colorectal cancer screening recommendations. The majority of physicians in our sample (93.8%) indicated that they typically brought up colorectal cancer screening to patients of a certain age (e.g. age 50). Although many of the physicians reported providing some type of screening, such as stool cards, digital rectal exam, or flexible sigmoidoscopy, in their office, most would need to refer to a specialist to receive more invasive screening such as a colonoscopy. Interestingly, a fraction of the sample (16.9%) specifically indicated a willingness to set up the appointment on the patient's behalf during the presentation of their recommendation: *"I say, 'is it okay with you if I make the appointment for you to have the test done?'"*

Some physicians (27.7%) mentioned that their recommendation was supported by authoritative groups, for example, "*We screen for various cancers and we follow the recommendations by the Cancer Society (sic) and the Task Force for Preventative Medicine (sic), which is a government agency that makes recommendations for screening for cancers.*" A few physicians (12.3%) explained that a person does not have to be experiencing symptoms to undergo screening ("*I say screening means checking for problems before you even have any symptoms*"). Issues involving health insurance coverage were included by 6.2% of the physicians: "*Your insurance will cover it, although I would recommend verifying that information with your insurance prior to seeing the endoscopist just to make sure that the physician is on your insurance plan.*"

A majority of the physicians in this sample mentioned gender (75.4%) or age (73.8%) in the initial sentences of their screening recommendation. Some physicians indicated a tendency to incorporate colorectal cancer screening into discussions of other screening tests (35.4%) or other preventative health behaviors (29.2%). About half (52.3%) indicated describing the benefits of colorectal cancer screening as part of their recommendation, and fewer (15.4%) suggested that they explained the downsides of foregoing screening during their presentation (Table 3).

More than half (72.3%) recommended a specific screening strategy, while fewer (27.7%) presented multiple strategies. About half (49.2%) included a justification to support why the recommended option was the best, and a few (10.8%) suggested an alternative approach during their recommendation. About a third of the sample (32.3%) provided detailed explanations of the screening procedures during their recommendations, but fewer (16.9%) included risks and benefits for specific screening tests.

About a third of the sample (33.8%) explicitly requested the patients to make the decision, however, very few (1.5%) specifically stated that it was acceptable to forego screening. Only 6.2% of the sample indicated that they typically paused to inquire whether patients had questions about their recommendation.

The next phase of our study involved documenting the degree to which the elements of informed decision making were included in the recommendations. In this analysis, we considered an element "covered" if any one of the underlying issues was included in their recommendation. Almost all of the physicians (98.5%) addressed the "nature of decision" element. A majority of physicians discussed uncertainties (67.7%). Fewer physicians covered the elements of "patient's role" (33.8%), "relevant risks and benefits" (16.9%), "reasonable alternatives" (10.8%), "assessment of patient understanding" (6.2%), or "exploration of patient's preferences" (1.5%). We examined the completeness of the recommendation, with respect to informed decision making, by summing the number of elements included by each physician. This new variable ranged from 1 to 5 with a mean of 2.35 ($\sigma = 1.02$) (Table 4).

3.4. Relationship between completeness of the recommendation, self-report compliance, and physician characteristics

The physicians involved in this study estimated compliance with their recommendations to be between 7.5% and 96.5% (mean estimated compliance rate was 58.9%). We found no significant relationship between provider type (e.g. family practice versus internal medicine), practice type (e.g. academic versus community) or years in practice and completeness of recommendation. Likewise, a regression of self-report compliance on types of practice, provider type, and years of practice yielded no strong explanatory relationship between those variables.

4. Discussion and conclusion

4.1. Discussion

The purpose of this research was to describe the content of physicians' colorectal screening recommendations, which have been found to be critical to patients' decisions to undergo screening. Studies have shown that physician's recommendation is an important predictor of patient compliance with CRC screening [15,25]. It can, therefore, be assumed that without the recommendation of a primary care physician the probability of a patient undergoing screening is quite small. However, not everyone who receives a recommendation actually undergoes screening. We propose that the content of the recommendation is a critical determinant to whether a patient follows the recommendation of a physician. Further, we contend that exploring the content of recommendations is an important means of examining key patient outcomes of physician practices.

Our examination of physician recommendations, using the framework of informed decision making, yielded mixed results. Given that almost all of the physicians (98.5%) addressed the "nature of decision" element, we found strong evidence that recommendations tend to include some information designed to increase patient knowledge. Inclusion of this basic information is critical as it both prepares the patient to consider undergoing screening and increases patient understanding of relevant issues. However, only a few physicians (6.2%) indicated that they customarily inquired whether the patient had questions, as a means of assessing patient understanding. This is also a missed opportunity for physicians to explore patients' health beliefs and cultural perspectives which influence their health decisions. A majority (67.7%) of our sample covered "uncertainties," and some (16.9%) addressed "relevant risks and benefits" in their standard recommendation presentation. Provision of this information supports a patient's ability to consider the trade-offs associated with the screening decision. Few physicians (33.8%) discussed the patient's role in the decision, assessed the patient's understanding (6.2%), or explored the patient's preferences (1.5%). Few in our sample (10.8%) indicated that their presentation included "reasonable alternatives" to their standard recommendation.

Guidance for the content of the colorectal screening recommendation is especially warranted for a number of reasons. First, while many health-related decisions are influenced by the presence of symptoms, recommendations for screening are presented to patients who are asymptomatic. Patients often think screening is unnecessary in the absence of symptoms. To counteract this common misconception, physicians should clarify that screening is in fact intended for those who are asymptotic or, in the specific case of colorectal cancer, intended to identify and remove pre-cancerous polyps before symptoms are experienced as well as identifying asymptomatic colorectal cancer. During their standard recommendation presentations, only a fraction of our sample (12.3%) presented this information. Another potential approach to informing patients about colorectal cancer screening is to associate it with screening for more familiar cancers (e.g. breast cancer) or conditions. This was the standard practice of 35.4% of our sample. Similarly, some physicians (29.2%) initiated their colorectal cancer screening recommendation with a presentation of other preventative health behaviors the patient could undertake to maintain his or her well-being. Alternatively, some physicians (27.7%) justified their recommendation by explaining that it followed clinical guidelines.

Second, providing a rationale for an asymptotic patient to undergo an invasive, unpleasant, risky screening procedure is challenging. Colorectal cancer screening provides a range of tangible and intangible benefits such as the removal of pre-cancerous polyps, the potential of early treatment of colorectal cancer, and peace-of-mind. In our sample, physician mentioned patient age (73.8%), a criterion in existing clinical guidelines, as a rationale for their

recommendation. It is unclear whether physicians in our sample used gender as a screening criterion as opposed to a reference point on which to engage in a discussion. Approximately half (52.3%) of the physicians in our sample addressed benefits of screening, while only 15.4% of the sample specified the downside of foregoing screening, and 16.9% described the risks and benefits associated with particular screening procedures.

Third, the existence of multiple screening methods underscores the scientific ambiguity surrounding this decision and provides an additional challenge to physicians. While the majority of physicians in our sample recommended a particular strategy (72.3%) rather than presented multiple options (27.7%), only some (49.2%) justified the alternative they recommended. About a third (32.3%) of our sample provided details about the screening procedure(s) they were recommending. Few in our sample (10.8%) indicated that they typically suggested a "compromise" strategy during this initial recommendation for those patients that might refuse the alternative being recommended.

The accuracy of the results of our study is limited by a number of biases. We recognize that a participant might fail to recall an issue during the interview that he or she normally covers with patients. More specifically, this study used a simplified role play approach to elicit the physician standard recommendation presentation. We do not know how well these presentations match those provided in actual practice settings as we were not under the time constraints of clinical encounters. We contend, however, that in the absence of constraints related to actual practice and the presence of motivational bias to provide complete responses, our data depicts a more thorough rather than less thorough presentation of issues. An interesting follow-up study would involve an examination of actual physician–patient interactions or an examination of medical records. Similar to the findings of Hawley et al. [26], we expect to conclude that our role play data collection resulted in an over-reporting of informed decision making elements. In addition, our participants all volunteered for this study, and therefore, our results are limited by self-selection bias. Another important follow-up study would focus on the actual exchanges between physician and patient to examine practices of assessing of patient understanding.

4.2. Conclusion

We propose that the content of the colorectal screening recommendation is a critical determinant to whether a patient follows the recommendation of a physician. Our examination of physician recommendations using the framework of informed decision making elements yielded mixed results. We found strong evidence that recommendations addressed the "nature of decision" element, however, only a few physicians indicated that they assessed patient understanding (6.2%) or explored patient's preferences (1.5%). While a majority of our sample covered "uncertainty" as part of their standard presentation, fewer covered risks and benefits, presented alternatives, or discussed the patient's role in the decision.

4.3. Practice implications

In this study, we described the content of physicians' colorectal screening recommendations, which have been found to be critical to patients' decisions to undergo screening. We present these results as a means of improving the content of recommendations. More specifically, we suggest that primary care physicians clarify that screening is meant for those who are asymptomatic, and present tangible and intangible benefits of screening. Additionally, we suggest physicians make a primary recommendation, and, if needed a "compromise" recommendation, in order to increase screening utilization. Further, we suggest that physicians ask patients questions not only to assess understanding but also gather contextual information about the patient's lives. This information may prove critical to the physician's

ability to formulate a recommendation reflective of patient's values and preferences. This, in turn, will support efforts to increase screening utilization through higher probability of patient's compliance with consensus-based recommendation.

Acknowledgments

I confirm all personal identifiers have been removed so that persons described are not identifiable and cannot be identified through the details of the story. The National Cancer Institute (R21CA102349 to SBW) and the Agency for Healthcare Research and Quality (R24HS01184503) supported this work. The project was approved by the University of Kentucky Institutional Review Board (#03-0079-P1B). We acknowledge and thank Mark Eckman, MD, and Mary Barron, RN, for assistance with recruitment, Jane Peters, Ph.D., and April Morgan, MA, for conducting interviews, Manu Mooker for her role on the analysis team, and Michael Doukas, MD, and Margaret Love, Ph.D., and Brian Stevenson, Ph.D., for consultation. Last, but not least, we wish to thank our interview participants.

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Table 1

Framework of informed decision making, illustrative quotations

Element of informed decision making	Exemplars of underlying coding factor(s)	Illustrative quotations
Discussion of the patient's role in decision making	Physician asks patient to make the decision	*"I [physician] was wondering if you would be interested in doing a colon cancer screening?"*
Discussion of the clinical issues or nature of the decision	Physician puts colorectal cancer screening in the context of other screening tests	*"Besides your pap smear and your mammogram and your bone density, we also have the lovely present of a colonoscopy."*
	Physician discusses colorectal cancer screening in the same conversation as other relevant preventative health issues	*"I have already asked if you have had a colon cancer screening and I have asked other preventative care issues and I will go through the recommendations."*
	Physician mentions gender in recommendation	*"I would say if it's a female, I would let them know there are three cancers we can screen for. If they're male I tell them there are two cancers we can screen for. I say screening means checking for problems before you even have any symptoms. And then I'd let them know the three cancers for female are breast cancer, cervical cancer and they're all very well aware of that, then I say colon cancer and some of them are aware there is screening, some are not."*
	Physician mentions age 50 in recommendation	*"It is usually recommended that people at the age of 50 have colon cancer screening."*
	Physician recommends a specific screening strategy	*"There are several different methods. The one that I recommend is doing what we call a colonoscopy."*
	Physician describes why recommended alternative is best	*"I can certainly consider amongst the available tests that the colon examination with a scope is by far and away the Cadillac of the available tests. It's far more effective than anything else we have available."*
	Physician discusses downsides of foregoing screening	*"If we find cancer in there, we can take it out and it is gone. Otherwise, colon cancer can be very devastating illness."*
	Physician presents multiple screening strategies	*"There are three options. We need one of them."*
Discussion of the alternatives	Physician describes alternatives to the recommended screening strategy	*"I'll say there other options. That's when I'll say we could do it the old way, which is the three stool cards and the sigmoidoscopy."*
Discussion of the potential benefits and risks of the alternatives	Physician tells about risks and benefits for each exam	*"We can do this type of screening, this type of screening, or this type of screening and here are the plusses and minuses of the different choices."*
Discussion of the uncertainties associated with the decision	Physician describes benefits of screening	*"One of the reasons we screen for cancer is because certain kind of cancers we can find early and if we find it early we can cure them. One of those cancers is colon cancer."*
	Physician provides detailed explanation of the screening process	*"You have several options. First, you can do hemacult cards, which you have to put some of your bowel movement on a little card we give you, we give you a little glove and stick so you don't have to touch anything disgusting, put it on the card, three cards, there are two little windows on the card, the nurse will show it to you, if you decide to go that option and we test it. If it is positive for blood, then we need to do a colonoscopy. We want to look inside your colon to make sure there aren't any polyps or anything that can be a cancer. There is a special diet that you need to follow, which the nurse will explain to you, it involves not eating any red meat for a few days, so we won't get any blood from the meat in the stool and make it a false positive test. So that's colorectal cancer screening with hemacult cards. It is pretty good, but it is going to miss some and it could have false positives. Where you may not have anything going on but the card turns blue anyway."*
Assessment of patient's understanding	Physician inquires whether patient has questions	*"If the patient had any questions about it [the recommendation] at that point we would usually discuss a little about it."*
Exploration of patient preference	Physician tells patient it is acceptable to forego screening	*"It's o.k. if you don't want to do one of them."*

Table 2

Sample description ($N = 65$)

Age, mean in years (range)	41.4 (29–64)
Gender (% male)	67.7
Race (%)	
Caucasian, non-Hispanic	93.9
African American, non-Hispanic	3.1
Asian or Pacific Islander	1.5
Native American or Alaskan Native	0.0
South Asian	0.0
Multi-racial	1.5
Years practicing medicine, mean (range)	13.9 (3–30)
Years in current clinic, mean (range)	8.0 (0.25–30)
Type of provider (%)	
Internal medicine	60.0
Family practice	40.0
Type of practice (%)[a]	
Community	52.3
Academic	50.8
Patients per week, mean (range)	1 (10–200)

[a]Two physicians split their time between multiple practices.

Table 3

Content of recommendation ($N = 65$)

Coding element	Inclusion rate, %physicians
Physician mentions gender in recommendation	75.4
Physician mentions age 50 in recommendation	73.8
Physician recommends a specific screening strategy	72.3
Physician describes benefits of screening	52.3
Physician describes why recommended alternative is best	49.2
Physician puts colorectal cancer screening in the context of other screening tests	35.4
Physician asks patient to make the decision	33.8
Physician provides detailed explanation of the screening procedures	32.3
Physician discusses colorectal cancer screening in the same conversation as other relevant preventative health issues	29.2
Physician presents multiple screening strategies	27.7
Physician tells about risks and benefits for each exam	16.9
Physician discusses the downsides of foregoing screening	15.4
Physician describes alternatives to the recommended screening strategy	10.8
Physician inquires whether patient has questions	6.2
Physician tells patient it is acceptable to forego screening	1.5

Table 4

Coverage of informed decision making elements ($N = 65$); categories consistent with Braddock et al. [22]

Informed decision making element	Coverage rate, %physicians
Discussion of patient's role	33.8
Nature of the decision	98.5
Alternatives	10.8
Benefits and risks	16.9
Uncertainties	67.7
Assessment of patient understanding	6.2
Exploration of patient preferences	1.5