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Influence of colonoscopy quality measures on patients' colonoscopist selection

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Abstract

Background—The Affordable Care Act emphasizes use of quality metrics and greater patient understanding of healthcare options and access to physician performance data. The objectives of this study were to determine patients' familiarity with colonoscopy quality measures (CQM) and their influence on patient selection of a colonoscopist.

Methods—A prospective survey of patients before screening or surveillance colonoscopy at university hospital, community hospital, and ambulatory procedure center endoscopy units was performed from 2011 to 2012.

Results—Among the 417 participants, 20% (85/417) researched their physician's rating. Rates of familiarity with CQM were 88 % (353/402) for adequate bowel preparation, 30% (118/398) for adenoma detection rate, 26% (102/397) for cecal intubation rate and 21% (82/394) for greater-than-six-minute withdrawal time. Ninety-six percent (366/386) believed colonoscopists' reporting of adenoma detection rate to other physicians was important or very important. In selecting a colonoscopist, primary care provider referral was ranked as the first or second-most important of four factors in 87% (339/391). Even among patients who responded "it is very important" to report CQM to other doctors and patients, none ranked CQM as the most important factor in selecting a colonoscopist.

Conclusion—Patient awareness of CQM, other than adequate bowel preparation, was low. Quality measure reporting is important to patients, but primary care provider referral was the most important factor in colonoscopist selection. This suggests that primary care providers as well as patients are important to include in educational strategies regarding quality metrics.

INTRODUCTION

Approximately 17 million colonoscopies are performed each year in the United States (1). The effectiveness of colonoscopy in reducing colorectal cancer is influenced by multiple factors including the quality of the bowel preparation, the colonoscopist's cecal intubation rate, the time taken to inspect the colon (withdrawal time), and the adenoma detection rate (ADR) (2–9). Significant variability has been demonstrated in reducing the development of colorectal cancer by colonoscopy, particularly in the proximal colon (9). Reporting, benchmarking and optimization of colonoscopy quality measures (CQM) has been advocated by national gastroenterology organizations and national online registries have been created (10).

The Patient Protection and Affordable Care Act has several sections devoted to a “quality agenda”, including linkage of quality metrics to reimbursement. The Patient-Centered Outcomes Research Institute, created within the Affordable Care Act seeks to “give patients a better understanding of the prevention, treatment and care options available, and the science that supports those options” (11) along with web based access to data on physician performance (12, 13). Colonoscopy quality issues have also been discussed in the popular media (7, 8).

We do not know whether patients have any familiarity with colonoscopy quality data reporting or if patients' knowledge of specific physician's CQM data would impact their choice of a colonoscopist. Therefore, we performed a survey of patients undergoing outpatient screening or surveillance colonoscopy to determine their awareness of CQM and their importance in selecting a specific colonoscopist.

METHODS

Study Population

Adults (>18 years) presenting for outpatient screening or surveillance colonoscopy to endoscopy centers at Yale-New Haven Hospital and Yale Health Outpatient Facility (May 2011 – June 2012), Griffin Hospital (February 2012 – June 2012), were eligible to participate study. These centers represent university-affiliated and community centers serving patients from lower, middle, and upper socioeconomic strata. Study participants completed a survey prior to undergoing colonoscopy. Patients unable to provide consent, and non-English speaking patients were excluded. This study was approved by the Institutional Review Board at each site.

Survey Instrument

A 15-question survey was developed to assess patients' knowledge of colonoscopy quality measures. The questionnaire was initially piloted on 10 subjects. The survey was structured to be completed in 7–10 minutes and was administered before outpatient colonoscopy. Data including age, gender, health status and indication for colonoscopy were assessed. Patients were asked if they had heard of specific CQM, including adequate bowel preparation, cecal intubation rate, greater-than-six-minutes withdrawal time and ADR; responses were yes or no. The quality measures chosen were those identified by national gastroenterology societies

as the most important due to their influence on ADR and/or colorectal cancer prevention (6, 10). Patients were asked if they researched their colonoscopist before their procedure (yes/no) and were asked to provide sources of information used. Participants rated the importance of gastroenterologists reporting their ADR to other doctors and patients. Patients were also asked to rate the importance of CQM reporting in selecting between two colonoscopists recommended by their primary care physician (PCP). In the final question, patients were asked to provide the rank order for the importance of four factors (CQM reporting, cost, ease of scheduling, and the referral recommendation of their primary doctor) on their colonoscopist selection.

Statistical Analysis

The association between demographics and knowledge and perception of CQM and factors influencing patient's gastroenterologist selection were examined using the chi-square test or Fisher's exact test for categorical variables and t-tests for continuous variables. Statistical analysis was performed using SAS v. 9.2 (SAS Institute Inc., Cary, NC). Multivariate logistic regression analysis, adjusting for age and sex, was used to assess characteristics associated with patients' ranking of the importance of the four factors for choice of colonoscopy. Sample size was determined based on the precision of the estimate of the outcome, proportion of patients more likely to choose a colonoscopist who reported their ADR to other doctors and patients. Assuming a proportion of 50%, a sample size of 400 provides a 95% CI bound of $\pm 5\%$ around the estimate of the proportion.

RESULTS

Patients Characteristics

Surveys were completed by 417 patients. Respondent characteristics are presented in Table 1. Eighty-five (20%) of the patients researched their colonoscopist prior to the procedure and 82 provided the source used for this research (Figure 1).

Colonoscopy quality measure knowledge

Patients' prior familiarity with specific CQM is shown in Table 2. Discussion with physicians was the most common source of information for each of the quality measures. For example, physicians were the main source of information regarding "adequate bowel preparation as a CQM for 193 (58%) of patients providing this information followed by brochures for 52 (16%). Familiarity with CQM was similar across different ages, sex, and education level.

Importance of quality measure reporting

Gastroenterologists' reporting of ADR to other doctors and patients was considered very important by the majority of respondents (Table 3). No significant difference in the proportion of patients rating ADR reporting to doctors as very or somewhat important was seen between those with college or advanced degrees (231/276(84%)) vs. lower levels of education (115/132(87%)). Similar results were seen in ADR reporting to other patients (224/276(81%) vs. (118/132 89%)). Patients were significantly more likely to choose a colonoscopist who reported their ADR to other doctors and patients than a colonoscopist

who did not (52% (203/391) vs. 10% (37/391) $p < 0.001$). When choosing between two colonoscopists recommended by their PCP, the reporting of ADR remained very important or somewhat important for 91% (354/391) of respondents.

Patients ranked the level of importance of four factors in influencing their selection of a colonoscopist (Figure 2). PCP's referral (339/391 (87%)) was most frequently ranked as the first or second-most important factor, followed by cost (282/391 (72%)), ease of scheduling (127/391 (33%)) and CQM reporting (52/391 (13%)). Among patients who responded "it is very important" to report CQM to other doctors and patients, none ranked CQM as the most important factor in selecting a colonoscopist. CQM was considered the least important of the 4 factors for choosing a colonoscopist among 192 (66%) of 291 patients stating ADR reporting to doctors is very important, among 42/68 (62%) stating ADR is somewhat important, and among 13/17 (76%) stating ADR is not important. For ADR reporting to patients, the results were 143/224 (64%), 75/110 (68%), and 27/38 (71%). Multivariate logistic regression analysis of factors associated with the importance of the 4 factors for choosing a colonoscopist revealed that subjects' stating ADR reporting was very important was not associated with ranking CQM as important (although it was associated with ranking cost as important (OR=2.22 (1.21–4.06) for ADR reporting to doctors and 2.44 (1.48–4.02) for ADR reporting to patients); only advanced level of education (college or higher) was associated with ranking CQM reporting as important (OR=0.23 (0.07–0.77)).

DISCUSSION

The identification of physicians providing high-quality care is an important objective in the allocation of health care resources for frequently performed procedures such as screening colonoscopy. Colonoscopy quality metrics have been demonstrated to impact the effectiveness of colonoscopy in preventing colon cancer (3, 5), and also will increasingly impact physician reimbursement. As patients become empowered to take a larger role in their health care management and their choice of physicians, patient familiarity with quality metrics and access to quality reporting will also become increasingly important.

We conducted a survey to identify patients' knowledge of current colonoscopy quality indicators and their influence on patient selection of a colonoscopist. The majority of patients were familiar with adequate bowel preparation as a quality measure. This is not surprising given that most endoscopy centers provide procedure preparation education and instructions indicating the importance of a good preparation. A minority of patients were familiar with other quality measures. At the time of this survey, CQM data on individual physicians or groups performing their colonoscopy was not available to patients. Despite this, most patients believed that it is very important that colonoscopists report their ADR to other physicians and patients and most would choose a colonoscopist who did so over one who did not. At present, approximately 20% of patients researched their colonoscopist prior to their procedure, primarily on the internet. Patients' high valuation of CQM suggests that ongoing initiatives to provide data to patients will be welcomed. The Centers for Medicare and Medicaid Services (CMS) Physician Compare website is expected to report physician performance on quality metrics to guide patients to higher value providers (14). Nevertheless, because patients consider physician referral, cost, and convenience to be even

more important than reporting of CQM, it is uncertain whether availability of CQM to patients will change their decisions regarding choice of a colonoscopist. We found no relationship between higher ranking of CQM among the four factors (cost, scheduling, primary doctor referral and CQM) and higher valuation of ADR reporting to patients or doctors. While these findings may appear contradictory, the questions were asked separately; patients appear to value CQM reporting highly in isolation but rate it below other factors when presented with multiple choices.

For the majority of patients, referral recommendation of their primary care doctor was the most important factor in choosing an endoscopist, followed by cost and ease of scheduling. Although most patients valued quality measure reporting to patients and doctors, reporting of colonoscopy quality measures was ranked as the least important of the four factors assessed in choosing a colonoscopist. This suggests that patients will continue to value the recommendations of their primary doctor. Based on our findings, health systems and health plans may conclude that education of PCP's in addition to patients, about the quality data of specialists may be an important strategy for directing patients to high value physicians. Colonoscopists with demonstrated high quality metrics might direct educational efforts to PCP's as well as patients. We are not aware of previously reported data on patient perception of colonoscopy quality measures. A recent study of gastroenterology fellows found that 55% knew the correct details of colonoscopy quality measures and their knowledge improved with an online tutorial (15).

A limitation of our study is that the patients evaluated were generally from the same geographic region and, although a broad range of socioeconomic strata are seen in these clinics, the majority of patients had college or advanced degrees. Thus, we cannot be certain that our population is representative of the broader US population (16). We did not, however, identify education level as a factor influencing CQM awareness or valuation of adenoma detection rate reporting to patients or other doctors. Because we did not record the number of patients who did not consent or were non-English speakers, we are not able to assess the representativeness of the cohort that did respond.

It is anticipated that patients will be presented with more data on physician quality and procedure costs in the coming years (14). We believe our survey presents an important "snapshot" of patients' perception of quality measures at this time, which may serve as a reference point in a rapidly changing healthcare landscape. Further study, following widespread availability of CQM data, of patients' interest and ability to independently evaluate CQM data and the relative influence of PCP referral versus cost and convenience is warranted.

Anticipated and unforeseen changes in the healthcare system which may include disruption of long term patient relationships with PCP's, restrictions on PCP specialist referrals and increasing demands on patients to identify low cost, high value procedure options will likely lead to significant changes in patient perceptions of and familiarity with quality data in the near future. Whether the value placed on CQM reporting by patients in our study will influence patient behavior in practice if factors such as referral patterns are no longer relevant for patients in new healthcare delivery systems remains to be determined

In summary, patient familiarity with colonoscopy quality measures other than “adequate bowel preparation” was low. Despite this, the majority of patients rated colonoscopist reporting of quality measures to patients and other physicians as very important. In the patients’ selection of a colonoscopist, however, primary care provider referral was rated as the most important of four factors, and quality reporting as the least important. This suggests that PCP’s as well as patients, are important to include in educational strategies about quality metrics.

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Figure 1.
Source of information for patient research of their colonoscopist (N=82)

Figure 2.
Factors influencing colonoscopist selection

Table 1

Characteristics of Survey Respondents

Sex	
Male	203/391 (52%)
Female	188/391 (48%)
Age	
< 50 yrs.	81/396 (20%)
50–64 yrs.	254/396 (64%)
65 yrs.	61/396 (15%)
Self-Reported Health Status	
Excellent	200/401 (50%)
Good	188/401 (47%)
Fair or poor	13/401 (47%)
Education Level	
0–11 Years	11/408 (3%)
High School Graduate	49/408 (12%)
Some College	72/408 (18%)
College Graduate	101/408 (25%)
Advance Degree	175/408 (43%)
Indication for Colonoscopy	
Initial Screening	168/417 (40%)
Surveillance	249/417 (40%)

Denominators represent number of patients who answered each question

Table 2

Patients' Prior Familiarity with Colonoscopy Quality Measures

Adequate bowel preparation	353/402 (88%)
Adenoma detection rate	118/398 (30%)
Cecal intubation	102/397 (26%)
>6-minute withdrawal time	82/394 (21%)

Denominators represent number of patients who answered each question

Table 3

Importance to Patients of Colonoscopist Reporting Their Adenoma Detection Rate (ADR)

ADR Reported to Other Doctors	
Very important	295/383 (77%)
Somewhat important	71/383 (19%)
Not all important	17/383 (4%)
ADR Reported to Patients	
Very important	228/379 (60%)
Somewhat important	112/379 (30%)
Not all important	39/379 (10%)

Denominators represent number of patients who answered each question