

Adoption of Patient-Centered Care Practices by Physicians

Results From a National Survey

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Background: Little is known about the extent to which primary care physicians (PCPs) practice patient-centered care, 1 of the Institute of Medicine's 6 dimensions of quality. This article describes the adoption of patient-centered practice attributes by PCPs.

Methods: Mail survey; nationally representative physician sample of 1837 physicians in practice at least 3 years postresidency.

Results: Eighty-three percent of PCPs surveyed are in favor of sharing of medical records with patients. Most physicians (87%) support team-based care. But, only 16% of PCPs communicate with their patients via e-mail; only 36% get feedback from their patients. Seventy-four per-

cent of PCPs still experience problems with availability of patients' medical records or test results; less than 50% have adopted patient reminder systems. Thirty-three percent of physicians practicing in groups of 50 or more have adopted 6 to 11 of the 11 patient-centered care practices targeted in the survey compared with 14% of solo physicians.

Conclusion: Although some patient-centered care practices have been adopted by most PCPs, other practices have not yet been adopted as broadly, especially those targeting coordination, team-based care, and support from appropriate information systems.

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PATIENT-CENTERED CARE IS 1 OF 6 domains of clinical care quality, along with safety, effectiveness, timeliness, efficiency, and equity.¹ According to the Institute of Medicine's definition, patient-centered care includes "providing care that is respectful of and responsive to individual patient preferences, needs, and values and ensuring that patient values guide all clinical decisions."^{1(p6)} The Picker Institute has delineated 8 dimensions of patient-centered care²: (1) respect for the patient's values, preferences, and expressed needs; (2) information and education; (3) access to care; (4) emotional support to relieve fear and anxiety; (5) involvement of family and friends; (6) continuity and secure transition between health care settings; (7) physical comfort; and (8) coordination of care.

The Commonwealth Fund 2003 National Survey of Physicians and Quality of Care³ examined physicians' attitudes about and involvement in activities related to quality of care. Elsewhere⁴ we have proposed 7 attributes for primary care practices that are likely to yield experiences that patients value highly. These include access to care when needed, patient engagement in care, use of information systems to sup-

port delivery of high-quality care and quality improvement, care coordination, integrated and comprehensive team-based care, routine performance-oriented patient-centered care surveys, and publicly available information that lets patients find the physicians and practices most suited to their needs. This article reports on the survey results regarding physician opinions and adoption of specific practices related to these attributes of patient-centered care.

METHODS

DATA SOURCE AND STUDY POPULATION

Data came from the Commonwealth Fund 2003 National Survey of Physicians and Quality of Care.³ The self-administered questionnaire was mailed to 3598 US physicians, randomly selected from an American Medical Association (AMA) list that included AMA members and nonmembers. All physicians in the sample were involved in direct care of adults and had been in practice at least 3 years postresidency. Specialists unlikely to be involved in patient care long term (eg, radiologists, anesthesiologists, pathologists, and dermatologists) were excluded. Identification of primary vs specialty care physicians was performed using the AMA master file. Data were weighted by sex, age, and practice setting.

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A total of 1837 surveys were returned, a response rate of 52.8% (calculated according to the criteria of the American Association for Public Opinion Research⁵). Most surveys (91%) were returned by mail; 9% were completed online.

STUDY VARIABLES

Physicians were categorized according to sex, race or ethnicity, number of years in practice, practice size (solo, small [2-9 physicians], medium [10-49], or large [≥ 50]), physician type (primary care physician [PCP] or specialty care), and mode of compensation (salaried or nonsalaried).

Physicians were asked about their adoption and/or their attitudes toward the following patient-centered care attributes:

1. *Access to Care.* The ability to provide same-day appointments and use of e-mail to correspond with patients or plans to adopt e-mail correspondence within the next year.

2. *Patient Engagement in Care.* Use of computerized or manual patient reminder systems for preventive or follow-up care, or plans to begin using such systems within the next year. Also, views on sharing medical records with patients.

3. *Information Systems That Ensure High Quality.* The ease of generating lists of patients by diagnosis (registries), medications currently taken, or abnormalities in test results that need follow-up. Also, the use of electronic medical records (EMRs) or plans to use them within the next year.

4. *Care Coordination.* Access to a patient's medical record at time of visit, coordination in the referral process, and whether the physician receives timely follow-up information from a referral.

5. *Care Integration and Team-Based Care.* Attitudes toward team-based work, specifically whether teamwork or communication among physicians or other medical care professionals would improve care, and whether the give-and-take among team members results in better decisions about patient care.

6. *Patient Feedback About Their Experience With Care.* Access to data on quality of care based on patient surveys, and whether patient surveys and experience are factors in physicians' compensation or income.

7. *Publicly Available Information About Quality.* Access to any quality-of-care data about other physicians when making a referral and whether information about the best specialists and centers would improve quality of care. Also, opinions about sharing data on the quality of their care with patients.

DATA ANALYSIS

We assessed physicians' adoption of and attitudes toward specific patient-centered care practices. We compared PCPs and specialists and report χ^2 tests using the .05 level as the cutoff for significant differences. We performed all analyses with STATA software (version 7.0; StataCorp, College Station, Tex), using the weighted survey estimator to adjust standard errors for clustering and stratification involved in the survey design.

We developed a patient-centered practice adoption scale to measure the degree to which physicians implement each of the survey's 11 patient-centered care practices. Low-scoring physicians implemented only 2 or fewer patient-centered interventions. A medium score was given to physicians who had implemented between 3 and 5; high scores applied to adoption of 6 or more practices. We then compared scores by such physician characteristics as sex, race or ethnicity, years in practice, practice size, specialty, and mode of compensation.

Table 1. Patient-Centered Practice Adoption Scale* According to Selected Physician Characteristics³

Physician and Practice Characteristics	Total	Patient-Centered Practice Score		
		Low (0-2)	Medium (3-5)	High (6-11)
Distribution, %	100	20	58	22
Age, y				
≤ 54	75	20	58	22
55-64	16	18	59	23
≥ 65	10	23	54	23
Sex				
Women	31	22	55	23
Men	69	19	59	22
Race or ethnicity†				
White, non-Hispanic	76	21	60	19
Black, non-Hispanic/Hispanic/Asian/other	24	14	56	30
Practicing as medical doctor, y				
0-15	53	22	56	22
≥ 16	47	18	60	22
Practice size‡				
Solo practice	24	21	65	14
2-9 Physicians	41	21	60	19
10-49 Physicians	22	20	49	31
≥ 50 Physicians	12	10	57	33
Physician specialty‡				
Primary care physician	29	20	58	22
Specialist	71	27	56	17
Mode of compensation				
Salaried	50	19	56	25
Nonsalaried	50	19	60	21

*The patient-centered practice adoption scale is based on 11 patient-centered care practices, as described in the "Methods" section. Numbers may not sum to 100 owing to rounding. Distribution, 100% for all.
 † $P < .05$.
 ‡ $P < .01$.

RESULTS

ADOPTION AND ATTITUDES TOWARD PATIENT-CENTERED CARE ATTRIBUTES

Most respondents (69%) are male and younger than 54 years (76%) (**Table 1**). Seventy-six percent are white, non-Hispanic. The most common practice type is small group (41%) and the least common is large group (12%). Fifty-three percent of the respondents have been in practice for more than 15 years. Overall, 50% are salaried. Most (71%) are specialists.

Table 2 shows current adoption and attitudes of physicians vis-à-vis specific patient-centered care practices.

ACCESS TO CARE

Overall, 64% of all physicians surveyed indicated they always or often provide a same-day appointment when a patient requests one. Primary care physicians are more likely to provide ready access to care than are specialists (77% vs 58%, $P < .001$). Use of e-mail, however, is much more limited. Sixteen percent of PCPs are currently

Table 2. Physician Adoption and Attitudes Toward Specific Patient-Centered Practices³

Patient-Centered Care Attribute*	Patient-Centered Practice Adoption			Patient-Centered Practice Attitude		
	Total Physicians	Primary Care Physicians	Specialists	Total Physicians	Primary Care Physicians	Specialists
Distribution, %	100	29	71	100	29	71
Access to care						
Provide same-day appointments to patients who request one always or often (a)†	64	77	58	NA	NA	NA
E-mail patients to communicate about care routinely or occasionally (b)	18	16	18			
Plan to e-mail patients to communicate about care within the next year (b)	NA	NA	NA	11	12	10
Patient engagement						
Send patients computerized or manual reminder notices about regular preventive or follow-up care (c)†	54	48	57	NA	NA	NA
Plan to send patients reminder notices about regular preventive or follow-up care within the next year (c)†	NA	NA	NA	10	19	6
Think patients definitely or probably should have easy access to their own medical records (d)‡	NA	NA	NA	85	83	87
Information systems						
Able to generate list of patients by diagnosis of health risk very or somewhat easily (e)	44	42	45	NA	NA	NA
Able to generate list of patients by medications they currently take very or somewhat easily (e)‡	15	18	14	NA	NA	NA
Use electronic patient medical records routinely or occasionally (b)‡	27	23	28	NA	NA	NA
Plan to use electronic patient medical records within the next year (b)	NA	NA	NA	20	23	19
Care coordination						
Receive timely information about the results of a patient referral to another physician always or often (a)†	65	71	62	NA	NA	NA
Patients' medical records, test results, or other relevant clinical information never or rarely not available at the time of patient's scheduled visit (f)	26	26	26	NA	NA	NA
Care integration and team-based care						
Think improved teamwork or communication among physicians or other medical care professionals would be very or somewhat effective in improving quality of care for patients (g)	NA	NA	NA	86	87	86
Agree or strongly agree that give-and-take among team members results in better decisions regarding patient care (h)	NA	NA	NA	73	73	73
Patient feedback						
Yes, receive data on quality of care based on patient surveys or experiences with their care (i)†	25	36	20	NA	NA	NA
Quality of care data based on patient surveys are a major or minor factor in physician's compensation or income (j)‡	27	30	25	NA	NA	NA
Publicly available information about quality						
Have access to data about physician's quality of care always or often when making referrals (a)	19	21	18	NA	NA	NA
Think having better information on the best specialized physicians and centers to refer patients for specialized care would be very or somewhat effective in improving quality of care for patients (g)	NA	NA	NA	71	74	70
Think a physician's own patients definitely or probably should have access to quality of care data about the individual physician (k)	NA	NA	NA	55	55	54

Abbreviation: NA, not applicable.

*Response categories were as follows: (a) Never; rarely; sometimes; often; always. (b) Yes, used routinely; yes, used occasionally; not used. If not used, plan to use within the next year, or no plan to use within the next year. (c) Yes, using a computerized system; yes, using a manual system; no, not done, plan to in next year; no, not done, no plan to in next year. (d) Yes, definitely; yes, probably; no. (e) Cannot generate; very difficult; somewhat difficult; somewhat easy; very easy. (f) Never; rarely; sometimes; often. (g) Not at all effective; not very effective; somewhat effective; very effective. (h) Strongly disagree; disagree; neither agree nor disagree; agree; strongly agree. (i) Yes; no. (j) Not a factor; minor factor; major factor. (k) No, definitely no; no, probably not; yes, probably; yes, definitely.

† $P < .001$.

‡ $P < .05$.

e-mailing patients routinely or occasionally, and there are no differences between primary and specialty care physicians. Another 12% of PCPs plan to adopt e-mail correspondence with their patients within the next year, which would bring the percentage of PCPs using that patient-centered practice to 28%.

PATIENT ENGAGEMENT

Fifty-four percent of all physicians have adopted a patient-centered practice that addresses the patient engagement attribute, for example, generating, either manually or electronically, patient reminder notices about preventive or

follow-up care. Primary care physicians are less likely than specialists to have done so (48% vs 57%, $P < .001$). An additional 19% of PCPs may try to increase patient engagement, reporting that they were planning to generate patient reminders within the next year. Only 6% of specialists plan to generate reminders, and 83% of PCPs think patients definitely or probably should have easy access to their own medical records.

INFORMATION SYSTEMS

Only 42% of PCPs indicated that it is very or somewhat easy to generate disease registries (ie, lists of patients by diagnosis or health risk). Only 18% say that it is very or somewhat easy to generate lists of patients who need special follow-up given the high-risk medications they take. Twenty-three percent of PCPs use EMRs routinely or occasionally, and an additional 23% of PCPs plan to adopt EMRs within the next year, bringing the total estimated number of EMR users to 46%.

CARE COORDINATION

Lack of timely feedback remains a major problem. Primary care physicians reported coordination problems, with 71% of PCPs indicating that they always or often receive timely referral information. Thirty-two percent of PCPs reported that patients often or sometimes experienced difficulties following discharge from a hospital because his or her physician did not receive needed information from the hospital in a timely manner (data not shown).

Most notably, PCPs mentioned problems in the transfer of important patient information and that patients received conflicting information. For example, 74% of PCPs observed some problems in the availability of patients' medical records, test results, or other relevant information at the time of a scheduled visit. Twenty-eight percent of PCPs often or sometimes observed that tests or procedures had to be repeated because findings were unavailable or inadequate for interpretation (data not shown), and 15% of PCPs often or sometimes observed that patients had positive test results that were not followed up appropriately (data not shown).

CARE INTEGRATION AND TEAM-BASED CARE

Seventy-three percent of PCPs agree or strongly agree that team-based care results in better care decisions; 87% (Table 2) think improved teamwork or communication among medical care professionals would be very or somewhat effective in improving quality of care. However, 33% of PCPs indicated that "the team process makes care more cumbersome," and 21% said that they agreed or strongly agreed that "the involvement of multiple team members increases the likelihood of medical errors" (data not shown).

PATIENT FEEDBACK

Only 36% of PCPs say they receive data based on patient surveys. Specialty care physicians are less likely to

receive such feedback (20%, $P < .001$). Few PCPs are rewarded for practicing patient-centered care. Productivity remains the main factor for determining compensation. Only 30% of PCPs indicate that patient surveys are a major or minor factor in their compensation. Furthermore, only 2% report that they are paid for e-mail correspondence with patients (data not shown).

PUBLICLY AVAILABLE INFORMATION ABOUT QUALITY

Twenty-one percent of PCPs always or often have data indicating a physician's quality of care when making referrals. Seventy-four percent of PCPs think that having better information to refer patients to the best specialized physicians and centers would be very or somewhat effective in improving patient care. Although 55% of PCPs think that their performance data should be shared with their patients (definitely or probably), only 13% were in definite agreement (data not shown).

CHARACTERISTICS OF PATIENT-CENTERED PHYSICIANS

The characteristics of PCPs who are more likely to have adopted and to provide patient-centered services are shown in Table 1. Twenty-two percent of PCPs indicate that they have adopted 6 or more of the patient-centered care practices included in the survey. Most PCPs (58%) currently score in the medium range as to actual implementation of these patient-centered practices.

Adoption of patient-centered care practices does not differ significantly by physicians' sex, number of years in practice, or mode of compensation but is associated with race or ethnicity, practice group size, and specialty. Thirty percent of minority physicians (black, Hispanic, or Asian) rated high on the patient-centered adoption scale, compared with 19% of white, non-Hispanic physicians ($P < .05$). Thirty-three percent of PCPs who practice in groups of 50 or more have patient-centered scores of 6 and higher, compared with 14% of solo physicians ($P < .01$). Twenty-seven percent of the specialists score in the low category compared with 20% of PCPs ($P < .01$).

COMMENT

Only 22% of PCPs scored in the high range in the implementation of practices that reflect 7 attributes of patient-centered care.⁴ The highest levels of performance were achieved in care access, in the form of same-day appointments (64% of physicians report this practice), and in care coordination with respect to referrals (65% of physicians report timely information about referrals). Eighty-three percent of PCPs favor sharing medical records with patients, a patient engagement practice, and most physicians (87%) support team-based care.

Other patient-centered practices were adopted less broadly. Most surveyed physicians said they lack the information systems needed to support several attributes of patient-centered care. Only 27% of physicians say they use

an EMR routinely or occasionally. Forty-two percent of PCPs can generate patient registries, one of the best practices included in the chronic care model developed by Wagner et al⁶ and Glasgow et al.⁷ Only 36% of PCPs receive feedback from their patients' experience with care. Seventy-four percent of physicians report that patients' medical records are not available at the time of the visit. Only 48% of PCPs provide patients with reminders.

Our results point to a gap between knowledge and practice, between what physicians say they want to achieve (patient-centered practice attitudes) and what they are able to do (patient-centered practice adoption). The survey has some limitations. Our modest response rate of 53% could bias the results, although we did not find any basic demographic differences between respondents and nonrespondents. Physicians who know more about or are more involved in patient-centered care practices might be more likely to respond than those who know less or are not involved. The results are also subject to social desirability biases. This survey reports the views of physicians, but ideally, one would obtain patients' perspectives as well.

Surveyed physicians reported several barriers to the adoption of patient-centered care practices; 63% cited knowledge and training as barriers to their adoption of EMRs,⁸ and 84% cited cost as a barrier. Twenty-seven percent said that patient survey data were factored into their compensation. Those results suggest that education, professional technical assistance, and financial incentives might facilitate broader adoption of patient-centered care practices.

The Accreditation Council for Graduate Medical Education has endorsed a set of 6 competencies, 4 of which are directly aligned with patient-centered care practices. Two of these competencies, patient care and interpersonal and communication skills, require physicians to conduct surveys of their patients. To fulfill the practice-based learning and improvement and systems-based practice competencies, physicians need to monitor their practices closely using tools such as patient registries, reminder systems, and clinical decision support.⁹

Professional recognition, licensing, and accrediting bodies and the board certification process now include patient-centered criteria. For example, the maintenance of certification program adopted by the American Board of Internal Medicine and the American Board of Medical Specialties requires that physicians show competence in developing patient registries and that they engage their patients in feedback via surveys.¹⁰⁻¹² The combined actions of the Accreditation Council for Graduate Medical Education and specialty boards might provide a positive incentive toward further adoption of patient-centered care practices.¹³

Technical assistance for physicians could be helpful in helping physicians implement certain services. A number of professional organizations and specialty societies are now engaged in spreading knowledge and facilitating the adoption of a variety of patient-centered tools.¹⁴ The American College of Physicians is leading an initiative called "Closing the Gap," a practice-based, team-oriented program that trains teams of physicians, nurses, and office administrators in using patient-centered care

practices for patients with chronic diseases.¹⁵ The Agency for Health Care Quality and Research has recently launched a Patient-Centered Care Initiative that provides grants to¹⁶

support the redesign and evaluation of new care processes that lead to greater patient empowerment, improved interaction between patient and provider, easier navigation through health care systems, and improved access, quality, and outcomes.

The Institute for Healthcare Improvement and the Medicare Quality Improvement Organizations have collaborative programs to help physicians implement same-day appointment policies and provide guidance about EMR use.^{17,18} Local learning collaborations that include teams of physicians, other health professionals, and patients have improved patients' access and care experiences.¹⁹⁻²³ Collaborative care tools, such as "How's Your Health," a free, Web-based program that fosters partnership between patients and physicians in the care compact, have been shown to lead to better patient outcomes (J. Wasson, MD, unpublished data, May 2, 2005).²⁴ Shared decision-making programs also improve patients' care experiences.²⁵

Financing changes could provide a positive stimulus. Pay-for-performance programs are evolving, and some programs measure physician practices' performance on technical aspects of quality, quality of patient experience, and adoption of information technologies.²⁶

High performance in patient-centered care practice seems to be an achievable goal. With the right knowledge, tools, and practice environment, and in partnership with their patients, physicians should be well positioned to provide the services and care that their patients want and have the right to expect.

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Correction

Error in Financial Disclosure. In the Original Investigation by Hsia et al titled "Conjugated Equine Estrogens and Coronary Heart Disease: The Women's Health Initiative," published in the February 13 issue of the ARCHIVES (2006;166:357-365), an error occurred in the financial disclosure. It should have appeared as follows: "Dr Langer received honoraria from Solvay Pharmaceuticals (Houston, Tex) and served as a consultant for Berlex (Montville, NJ), Monarch-King Pharmaceuticals (Bristol, Tenn), and Wyeth Pharmaceuticals (Collegeville, Pa). Dr Prentice received an honorarium from Wyeth Pharmaceuticals in 2004." This correction was made previously to online versions of this article.