Physicians’ Experiences and Beliefs Regarding Informal Consultation

Nancy L. Keating, MD, MPH; Alan M. Zaslavsky, PhD; John Z. Ayanian, MD, MPP

Context.—Efforts to control medical expenses by emphasizing primary care and limiting specialty care may influence how physicians use informal or “curbside” consultation.

Objective.—To understand physicians’ use of and beliefs about informal consultation.

Design.—Survey mailed in July 1997.

Participants.—Of a random sample of Massachusetts general internists, pediatricians, cardiologists, orthopedic surgeons (n = 300 each), and infectious disease specialists (n = 200) surveyed, 1225 were eligible and 705 (58%) responded.

Main Outcome Measures.—Self-reported use of and beliefs about informal consultation.

Results.—Generalist physicians requested more informal consultations than specialists (median, 3 vs 1 per week; P < .001) and were asked to provide fewer (2 vs 5 per week; P < .001). In multivariate analyses, physicians in a health maintenance organization, multispecialty group, or single-specialty group requested more informal consultations than those in solo practice (82%, 40%, and 28% more, respectively; all P < .001) and were more often asked to provide them (43%, 63%, and 14% more, respectively; all P < .05). Physicians with at least 30% of their income from capitation requested 38% more and were asked to provide 46% more informal consultations than those with little or no income from capitation (both P < .001). Generalists’ overall approval of informal consultation was greater than specialists’ (mean 5.9 vs 5.1 on a 7-point Likert scale; P < .001), and approval was strongly associated with beliefs about how informal consultation affects quality of care (P < .001).

Conclusions.—Use of informal consultation is common, varies by specialty, practice setting, and capitation, and therefore may increase with current trends toward group practice and managed care. Because overall approval of informal consultation is strongly associated with beliefs about how it affects quality of care, this issue should be carefully considered by physicians who participate in informal consultation.

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INFORMAL or "curbside" consultation has long been an important part of medical practice, yet little is known about physicians’ experiences with informal consultation and their perceptions of its role in medical practice. Published reports have focused on the experiences of a few infectious disease and endocrinology specialists in a limited range of practice settings. Moreover, current managed care strategies that emphasize primary care and limit referrals to specialists may stimulate greater use of informal consultation. To encourage more efficient and appropriate use of referrals and consultations, some managed care organizations and medical groups have organized informal consultation by designating clinicians to provide informal clinical advice to colleagues. In addition, efforts to improve physicians’ access to clinical advice have led some professional organizations and an academic medical center to sponsor Internet-based clinical discussion groups or telephone consultation services.

We surveyed a statewide sample of physicians in 5 specialties to learn how they use informal consultation. We also assessed physicians’ beliefs about the overall value of informal consultation and its role in medical practice, perceptions of its effect on quality of care, and beliefs about the organization of this process by health plans and medical groups.

METHODS

Study Population

We surveyed general internists, general pediatricians, orthopedic surgeons (as surgical specialists), cardiologists (as procedure-oriented medical specialists), and infectious disease specialists (as nonprocedural medical specialists). The Massachusetts Board of Registration in Medicine, Boston, provided the names and addresses of all licensed physicians, as well as information on their age, sex, board certification status, practice setting, and practice hours per week. We excluded physicians reporting less than 20 hours per week of professional activity, a business address outside Massachusetts, or medical school graduation after 1992 to avoid sampling physicians in training. In the state database, physicians could report up to 2 specialties in any order. Physicians could be sampled as general internists or pediatricians if they listed only internal medicine or pediatrics. Orthopedic surgeons, cardiologists, or infectious disease specialists were eligible to be sampled if they listed that specialty as either of the 2 specialties.

The final sampling frame included 1518 general internists, 808 pediatricians, 606 cardiologists, 331 orthopedic surgeons, and 200 infectious disease specialists. We included all 200 infectious disease specialists and randomly selected 300 physicians from each of the other specialties. Thirty physicians took part in a pilot survey, leaving 1970 physicians in the study cohort.

Definition

Prior to administering our survey, we conducted a focus group of 7 generalist
and specialist physicians from various practice settings, which yielded the following structured definition of informal consultation:

An informal or “curbside” consultation is the process in which a physician seeks information or advice about patient care from another physician who has a particular expertise with the patient. It may be a formal consultation between the patient and the consultant physician at that time.

Based on the views of the focus group participants, we specifically asked surveyed physicians to include the following as informal consultations: contacts within a specialty if the consultant physician has an expertise that is being sought; contacts that precede a formal consultation when a physician seeks information to manage a patient until the patient can be seen by the consultant; brief face-to-face encounters with patients not made formal by full documentation, billing of the visit, or both; contacts regarding patients whom the consultant has seen in the past but did not see on that particular day; and interactions with nurse practitioners and physician assistants who work in a different specialty.

Survey Questionnaire

In a 4-page written questionnaire, physicians were asked to consider their most recent week of usual practice and report the numbers of patients they saw, informal consultations they requested, and informal consultations they were asked to provide. We asked them to report the 3 specialties, in descending order, from which they most frequently requested and by which they are most frequently asked to provide informal consultation.

Based on the focus group, physician interviews, and review of the literature, we developed a series of questions pertaining to reasons for requesting informal consultation, general beliefs about its role in patient care and impact on quality of care, and beliefs about its limitations. Using 7-point Likert scales, physicians rated reasons for use from not at all important (1) to very important (7), general beliefs about its role in patient care and impact on quality of care, and beliefs about its limitations. Using 7-point Likert scales, physicians rated reasons for use from not at all important (1) to very important (7), general beliefs about its role in patient care and impact on quality of care, and beliefs about its limitations.

The study protocol was approved by the Human Research Committee at Brigham and Women’s Hospital, Boston, Mass. The survey was mailed in July 1997, together with a letter describing its purpose, its funding source, and its confidential, voluntary nature. All physicians received a reminder postcard 1 week after the original mailing, and physicians who still did not respond received a second questionnaire 3 weeks after the first mailing. Nonrespondents were called to encourage participation, and a final mailing was sent to those not responding within 3 weeks of the last call.

Statistical Analysis

If a physician was sampled as a specialist but in our questionnaire reported his or her primary specialty as internal medicine or pediatrics and reported providing predominantly primary care for most patients, he or she was classified as a generalist in the analysis (12 of the cardiologists and 25 of the infectious disease specialists). The patterns of response were similar for general internists and pediatricians; therefore, these groups were combined for many analyses.

Characteristics of the physicians were compared by specialty with the Pearson χ² test for categorical variables and the F test for continuous variables. The numbers of informal consultations requested and provided and the ratings of beliefs were compared by specialty with the Wilcoxon rank sum and Kruskal-Wallis tests. Use of informal consultation was also assessed by multivariate Poisson regression with adjustment for specialty, sex, board certification, practice type (staff model health maintenance organization (HMO), multispecialty group, single-specialty group, or solo), practice site (hospital, community health center, or non–hospital-based office practice), time since medical school graduation (in 10-year intervals), number of patient visits (logarithmically transformed), self-reported expertise within clinical field, rural practice location (population density <1000 persons per square mile), and an indicator variable for physicians who reported receiving 30% or more of their clinical income from capitation.

To assess beliefs about the effect of informal consultation on quality of care, physicians were asked whether informal consultation contributes to higher-quality care; improves patients’ satisfaction with care; helps to limit unnecessary tests, procedures, and referrals; and helps physicians keep up with changes in medical practice. We created a summary quality score using the average of responses to these 4 questions.

We used logistic regression to determine correlates of overall approval of informal consultation at a predetermined cutoff of 6 or 7 on a Likert scale from strongly disagree (1) to strongly agree (7). Three models were created. The first included only physician and practice characteristics. In the second, we added the numbers of informal consultations that physicians requested and were asked to provide and how many patients they saw per week. Finally, to determine whether beliefs about the impact of informal consultation on quality of care are related to overall approval, we added the summary quality score to a third model. These models also were examined with ordinal logistic regression. Two-tailed P values or 95% confidence intervals (CIs) are reported for all analyses.

RESULTS

Of the 1370 physicians surveyed, 1225 were presently practicing in Massachusetts. Of these 1225 physicians, 765 completed the survey (58% overall response rate). The response rate was 57% for general internists, 64% for pediatricians, 47% for cardiologists, 58% for orthopedic surgeons, and 64% for infectious disease specialists. Respondents and nonrespondents did not differ significantly by years since medical school graduation, sex, board certification status, or rural practice location. Respondents reported fewer hours per week in direct patient care than nonrespondents (47.3 hours vs 50.7 hours; P < .003). Respondents were less likely than nonrespondents to work in a private office (24% vs 34%; P < .001) and more likely to work in an HMO (8% vs 4%; P = .009).

Characteristics of the respondents are presented in Table 1. Pediatricians reported treating the largest number of patients per week, followed by orthopedic surgeons, internists, cardiologists, and infectious disease specialists. Generalists (general internists and pediatricians) requested more informal consultations than specialists (median, 3 vs 1 per week; P < .001) and were less often asked to provide informal consultations (median, 2 vs 5 per week; P < .001). Infectious disease specialists, who saw the fewest patients per week, were asked to provide the greatest number of informal consultations per week.

Factors Associated With Use of Informal Consultation

Table 2 shows the specialties most often consulted informally and those most frequently seeking informal consultation, as reported by physicians in each sampled specialty. Both generalist and specialist physicians most commonly requested informal consultation from...
medical subspecialists. Specialists also commonly reported requesting and providing informal consultation with physicians from their own specialties.

In adjusted analyses (Table 3), orthopedic surgeons and infectious disease specialists less frequently requested informal consultation than generalists, while each of the 3 groups of specialists was more frequently asked to provide informal consultation than were generalists. Physicians with more years since medical school graduation and those who were board certified were less likely to request informal consultation than more recent graduates and physicians who were not board certified, respectively. Physicians with an expertise within their clinical fields were more likely than others to be asked to provide informal consultation, while women physicians and those practicing in rural areas were less likely than others to provide informal consultation. Clinicians seeing more patients per week, those who worked in a staff-model HMO or medical group (vs solo practice), and those who worked primarily in a hospital or community health center (vs office practice) both more frequently requested and were more often asked to provide informal consultation, as were physicians who received at least 30% of their salary from capitation. Results were similar when we replaced this last variable with an indicator variable for physicians with any salary from capitation.

Reasons for using informal consultation, in order of importance to generalists in their own decisions to request informal consultation, are shown in Table 4, as are rankings of specialists who were asked how important they thought that these reasons were in all physicians’ decisions to request informal consultation. Generalists and specialists generally agreed on the relative importance of these factors, except for the lower rank given by specialists to “care for a patient who refuses to see a specialist.” Overall, physicians perceived informal consultation more as a tool for gathering information than as a means of avoiding fees, excess appointments, barriers to referral, or malpractice litigation.

Beliefs About Informal Consultation

Generalists were more likely than specialists to believe that informal consultation improves quality of care (mean summary quality score, 5.7 vs 4.9; $P < .001$). Specialists expressed more concern than generalists that recommendations made by consultants may be based on incomplete or inaccurate information (mean, 5.4 vs 4.1; $P < .001$) and that time constraints on the consultant may lead to incomplete advice (mean, 5.0 vs 4.0; $P < .001$).

Specialists were more likely than generalists to consider lack of official documentation a problem (mean, 4.8 vs 4.0; $P < .001$) and felt more strongly that names of informal consultants should never be recorded without explicit permission (mean, 6.1 vs 4.5; $P < .001$). Lack of compensation for providing informal consultation was perceived to be more of a problem by infectious disease specialists (mean, 5.1) and cardiologists (mean, 4.0) than by orthopedic surgeons (mean, 3.5) and generalist physicians (mean, 3.7) ($P < .001$ for comparison of the 4 groups).

Specialists believed more strongly than did generalists that consultants should never be held liable for informal advice (mean, 5.6 vs 5.0; $P < .001$) and expressed more concern about the risk of malpractice litigation than did generalists (mean, 4.0 vs 3.3; $P < .001$). Both groups believed that informal consultation should take place only among physicians who know each other’s abilities well (mean, 5.6 vs 5.4; $P = .18$).
Physicians approved highly of informal consultation, although generalists' ratings were higher than those of specialists (mean, 5.9 vs 5.1; \(P<.001\)). When logistic regression was used to adjust for physician and practice characteristics, odds of approval were lower for cardiologists (odds ratio [OR], 0.4; 95% CI, 0.2-0.6), orthopedic surgeons (OR, 0.5; 95% CI, 0.3-0.7), and infectious disease specialists (OR, 0.1; 95% CI, 0.06-0.2) than for generalists. Physicians who worked in an HMO were more likely than those in solo practice to approve of informal consultation (OR, 2.3; 95% CI, 1.1-5.0). Years since graduation, practice site, sex, rural location, and income from capitation were not associated with approval in the multivariate analysis.

In a second model, we added the frequencies with which physicians requested informal consultations, the frequencies with which they were asked to provide them, and the number of patients they saw per week. Physicians who had requested no informal consultations in the previous week of practice were less likely to approve of informal consultation (\(P=.002\)), and those who requested increasing numbers of informal consultation were more likely to approve (\(P=.03\)). Physicians' approval was not related to the number of informal consultations they were asked to provide or to practice volume. Differences previously observed between specialists were unchanged, but working in an HMO was no longer associated with approval.

In a third model, we added the summary measure that assessed physicians' views about the effect of informal consultation on quality of care. Physicians who believed that informal consultation improves quality of care were much more likely to approve of informal consultation than those who did not (\(P<.001\)). Controlling for this variable, cardiologists and orthopedic surgeons no longer differed from generalists in their approval of informal consultation, and the odds of approval for infectious disease specialists were slightly attenuated (OR, 0.2; 95% CI, 0.1-0.6). Results of these 3 analyses were similar when ordinal logistic regression was used.

### Organization of Informal Consultation

Forty-three generalists (12%) and 12 specialists (6%) reported having access to an organized informal consultation service (\(P=.005\)) available through their HMOs (42% \((n = 27)\), medical group (27%) \((n = 17)\), hospital (27%) \((n = 17)\), or another entity (4%) \((n = 3)\). Among those who did not have access, 140 generalists (46%) and 71 specialists (23%) reported that they would like to have access to such a service, 113 generalists (37%) and 116 specialists (37%) were uncertain, and the remaining physicians would not (\(P<0.001\)). One hundred one generalists (29%) and 112 specialists (32%) would be willing to be a consultant for such a service, 81 (23%) and 102 (29%), respectively, were unwilling, 162 (46%) and 119 (34%) were unsure, and 8 (2%) and 14 (4%) already serve in this role (\(P = .01\)).

Both generalists and specialists believed that guidelines for appropriate use should be created for organized informal consultation services (mean, 5.3 and 5.4, respectively; \(P = .28\)). Specialists believed more strongly than generalists that consultant physicians should be compensated for their efforts (mean, 5.7 vs 5.3; \(P<.001\)) and that an informal consultation service could increase liability for consultant physicians (mean, 5.4 vs 5.0; \(P<.001\)).

### Table 3.—Characteristics Associated With Requesting and Being Asked to Provide Increasing Numbers of Informal Consultations

<table>
<thead>
<tr>
<th>Characteristics</th>
<th>Adjusted Effect</th>
<th>(%) Change</th>
<th>(95% CI)</th>
<th>(%) Change</th>
<th>(95% CI)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Specialty vs generalist</td>
<td></td>
<td></td>
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<td></td>
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<tr>
<td>Cardiology</td>
<td>(-14)</td>
<td>(-27) to 1</td>
<td>105 (82 to 132)§</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Orthopedic surgery</td>
<td>(-37)</td>
<td>(-45) to (-27)§</td>
<td>64 (47 to 85)§</td>
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<tr>
<td>Infectious disease</td>
<td>(-32)</td>
<td>(-40) to (-17)§</td>
<td>353 (300 to 412)§</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Years since graduation (10-y increments)</td>
<td>(-6)</td>
<td>(-10) to (-1)†</td>
<td>(-3) ((-7) to (-1)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Female</td>
<td>(-5)</td>
<td>(-15) to 6</td>
<td>(-20) ((-27) to (-11))§</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Board certification</td>
<td>(-12)</td>
<td>(-22) to (-2)†</td>
<td>(1) ((-8) to (11))</td>
<td></td>
<td></td>
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<tr>
<td>Self-reported area of expertise within specialty</td>
<td>(3)</td>
<td>(-7) to 14</td>
<td>30 (21 to 44)§</td>
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<td></td>
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<tr>
<td>Practice type vs solo</td>
<td></td>
<td></td>
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<tr>
<td>Staff-model health maintenance organization</td>
<td>82 (51 to 119)§</td>
<td>43 (21 to 70) §</td>
<td></td>
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<tr>
<td>Multispecialty group</td>
<td>40 (19 to 65)§</td>
<td>63 (45 to 84)§</td>
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<tr>
<td>Single-specialty group</td>
<td>28 (11 to 49)§</td>
<td>14 (1 to 28)†</td>
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<tr>
<td>Practice site vs office</td>
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<tr>
<td>Major teaching hospital</td>
<td>27 (8 to 49)§</td>
<td>38 (23 to 54)§</td>
<td></td>
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<tr>
<td>Other hospital</td>
<td>31 (13 to 52)§</td>
<td>45 (30 to 61)§</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Community health center</td>
<td>23 (6 to 44)§</td>
<td>28 (10 to 49)§</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Rural location of practice</td>
<td>(-5)</td>
<td>(-16) to 7</td>
<td>(-14) ((-23) to (-3))§</td>
<td></td>
<td></td>
</tr>
<tr>
<td>(\leq30) Clinical income from capitation</td>
<td>38 (22 to 55)§</td>
<td>46 (31 to 63)§</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>No. of patients seen per week (effect of doubling number of patients seen)</td>
<td>37 (28 to 45)§</td>
<td>34 (27 to 40)§</td>
<td></td>
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</tr>
</tbody>
</table>

*Using Poisson regression to adjust simultaneously for all variables listed. CI indicates confidence interval.
†\(P<0.05\).
‡\(P<0.005\).
§\(P<0.001\).

### Table 4.—Reasons for Requesting Informal Consultation

<table>
<thead>
<tr>
<th>Reasons</th>
<th>Rank of Importance (Mean Rating)*</th>
</tr>
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<tbody>
<tr>
<td>Obtain an expert opinion</td>
<td>Generalists 1.6 (4.4)</td>
</tr>
<tr>
<td>Verify information and obtain reassurance</td>
<td>Specialists 1.6 (4.4)</td>
</tr>
<tr>
<td>Encourage discussion and learn from consultant</td>
<td>Generalists 3.5 (5.8)</td>
</tr>
<tr>
<td>Obtain information not readily available</td>
<td>Specialists 3.5 (5.1)</td>
</tr>
<tr>
<td>Save time looking for information</td>
<td>Generalists 4.5 (5.4)</td>
</tr>
<tr>
<td>Save patient another appointment and/or fee</td>
<td>Specialists 4.5 (5.0)</td>
</tr>
<tr>
<td>Care for a patient who refuses to see a specialist</td>
<td>Generalists 7.3 (2.2)</td>
</tr>
<tr>
<td>Protect against malpractice</td>
<td>Specialists 7.3 (2.1)</td>
</tr>
<tr>
<td>Respond to financial and/or administrative incentives not to refer</td>
<td>Generalists 9.2 (2.2)</td>
</tr>
<tr>
<td>Prevent loss of patient to consultant</td>
<td>Specialists 9.2 (2.1)</td>
</tr>
</tbody>
</table>

*As reported on a 7-point Likert scale ranging from “not at all important” (1) to “very important” (7). Generalists were asked to rank importance of reasons for their decisions to request informal consultation. Specialists were asked to rate importance of reasons for physicians’ decisions to request informal consultation.
†\(P<.001\) for difference in rankings of importance between generalists and specialists by the Wilcoxon log rank test.

### COMMENT

By examining the experiences and beliefs of more than 700 physicians in medical, surgical, and pediatric disciplines from a variety of settings, our study provides the broadest assessment of informal consultation in medical practice available to date. We found that informal consultation is frequently used by physicians in various specialties, primarily to obtain clinical expertise from colleagues. Although generalists most often seek information from physicians with specialty training, specialists also request informal
consultation, often within their own fields. Use of informal consultation is associated with working in a group practice or an HMO rather than a solo practice; working in a hospital or in a community health center rather than a private office; and receiving some income from capitation. Both the proximity of colleagues and the existence of shared incentives may explain these findings. Thus, use of informal consultation is likely to increase with the continuing growth of group practice, managed care, and capitation.

Physicians generally approve of informal consultation, although generalists are more approving than specialists. Overall approval is highly related to beliefs about how informal consultation affects quality of care. These beliefs help to explain the lower approval ratings among cardiologists and orthopedic surgeons but not those of infectious disease specialists, who saw substantially fewer patients than other physicians yet were asked to provide a disproportionate share of informal consultations. Despite concerns about providing informal consultation, some specialists have found that informal consultation increases their professional satisfaction by creating opportunities to educate colleagues and improve efficiency. Amid financial and administrative barriers to specialty care, generalist physicians may care for patients with an increasingly broad range of conditions. In this context, physicians and the organizations for which they work are seeking more efficient methods for gathering and sharing clinical information. Integrating specialists into groups of primary care physicians can foster a culture of cooperation and mutual education between primary care physicians and specialists; organized informal consultation services may exemplify this concept. Such services enable specialists to answer simple questions promptly, so they may focus their clinical practice on more complex cases that require their expertise most. Consultants can also identify topics for continuing medical education and guideline development within their medical groups or health plans.

Concerns of some physicians about the effects of informal consultation on quality of care, the completeness of information exchanged, and the increased risk of liability suggest that guidelines for seeking formal and informal consultation may enhance organized informal consultation, as might standards for exchanging and documenting informal consultation. Informal consultants in organized systems should continue to triage informal questions and decide when formal consultations are required. Although some consultants may be uncomfortable making these judgments without seeing a patient, these decisions resemble ones that physicians routinely make while talking with patients by telephone. Physicians’ efforts as informal consultants should be valued in organized systems and compensated appropriately. A recent study estimated that the 7 gastroenterologists of a staff-model HMO spent 7.2 hours per week providing informal consultation to other physicians in the plan.

Our study has several limitations. First, although our response rate exceeded that of most published physician surveys, response bias may be present. Respondents reported practicing 3 fewer hours per week than nonrespondents, were less likely to work in a private office, and were more likely to work in an HMO. However, in analyses not reported these observed differences between respondents and nonrespondents predicted differences of 1% or less in estimates of use and overall approval. Moreover, use and beliefs did not differ significantly between early and late respondents, suggesting that nonrespondents may also follow similar patterns. Even if nonrespondents had different beliefs, it is unlikely that our main findings would be altered substantially. For example, all nonresponding specialists would have had to report the highest possible approval of informal consultation for the average ratings of all specialists (respondents and nonrespondents combined) to approximate those of generalists.

Second, physicians’ reports of the number of patients they saw and the number of consultations that they requested and those that they were asked to provide are subject to recall bias. We attempted to lessen this bias by asking respondents to think about their most recent week of usual practice. In addition, our findings on differential use are probably less sensitive to recall bias. Third, we surveyed Massachusetts physicians in 5 specialties, so the generalizability of our findings to other sites and specialties should be evaluated.

As physicians and health care organizations seek to provide care more efficiently, understanding how physicians acquire information and knowledge will be of paramount importance. Much effort has been devoted in recent years to developing clinical practice guidelines to assist physicians with patient care. Although such guidelines can be a valuable asset in clinical practice, they are often not readily accessible, may be outdated, and may be too impersonal for many clinical decisions. At these times, the informal sharing of clinical expertise may benefit clinicians and patients. Formal consultation will continue to play a key role in medical care. However, informal consultation most likely will remain an important means of communication, especially with increasing efforts to enhance efficiency and to control medical costs. A better understanding of how physicians communicate both formally and informally will be essential to determine how generalists and specialists can best work together to provide high-quality health care.

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References


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