Time and the Patient–Physician Relationship

David C. Dugdale, MD, Ronald Epstein, MD, Steven Z. Pantilat, MD

Being a physician always has been a busy job. This is especially true for primary care physicians who set as their goal the delivery and coordination of comprehensive care for patients. Achieving such a goal requires availability, a broad spectrum of medical knowledge, effective use of the local health care system, and attention to both the "big picture" and the details of a patient's life and health.

The technical resources that go into the delivery of health care have been studied extensively. Major advances are frequent in the arenas of diagnostic testing, therapeutics, and pharmaceuticals. Modern information transfer technology has made physicians' ability to access information about these advances easier and contributed to patients being more aware of changes in many aspects of health care. At the same time, physicians may be called on to limit utilization of health care resources to services that are judged to be "medically necessary."

There has been relatively little study of physician time as a resource.[1] Yet both as a contribution to health care costs and as a key element in patient-doctor relationships, there is reason to believe that it deserves more attention. Furthermore, with an increasing emphasis on value and efficiency in health care delivery, quality time between physician and patient is an increasingly valuable resource. Physicians spend time in face-to-face contact with patients gathering information, and developing a relationship, doing administrative work related to visits, and maintaining their knowledge base. Importantly, time is always finite: no matter what demands a physician faces, there are only 24 hours in a day.

In the current practice environment, physicians face mounting demands on their time. Increasing administrative requirements for health care delivery (e.g., service and authorization requests, utilization review processes) encroach on time spent with patients. The 1995 Commonwealth Fund survey found that 41% of physicians noted a decline in the amount of time spent with patients and 43% noted a decline in the amount of time spent with colleagues between 1992 and 1995.[2] Because of social and demographic changes in the physician workforce, many physicians have family responsibilities that reduce their time available for work. These factors have moved time management for physicians, in their practices and in their lives, to the forefront as a critical issue.

In this article we examine the effects of limiting time on the patient-doctor relationship. We review the effects that are attributable to managed care. Finally, we offer recommendations for teaching medical students and residents skills that will help establish and maintain their patient-doctor relationships in the face of time pressure.

EFFECTS OF TIME ON PATIENT CARE

Although all practicing physicians can think of cases in which they wished they had more time for a given patient visit, systematic study of the relation between the time spent in a patient visit and outcome variables has been scant. However, it has been examined in the areas listed in Table 1 and discussed below.

Patient Satisfaction

Although patient satisfaction with outpatient care is associated with activities that are time-intensive, the association with visit length is less clear. Robbins et al. studied patient satisfaction in an academic family medicine practice and found that time the physician spent in health education and the effects of treatment had an important bearing on patient satisfaction.[3] In a study of community-based general internists, Laine et al. found that patients ranked the importance of providing health-related information second only to clinical skill.[4] Their analysis did not explicitly include factors related to visit length.

Kaplan et al. studied general internists and family physicians as part of the Medical Outcomes Study (data from 1986).[5] They had previously found that patients of physicians with a "participatory decision-making style" had better health outcomes and were more satisfied. They found that physicians with a more participatory decision-making style were 30% less likely to have patients leave their care. In addition, physicians with a practice volume under 70 visits per week tended to have a favorable decision-making style. Kaplan et al. did not, however, report actual visit lengths.[5]

Like and Zyzanski studied determinants of patient satisfaction in a university-based family practice in Cleveland.[6] They found that patients who stated they wished they had spent more time with the physician were less satisfied. Other studies of patient satisfaction and visit length have come from Great Britain. Morrell et al.[7] and Ridsdale et al.[8] both found a greater likelihood of patients

Table 1. Components of Care Affected by Time

Patient satisfaction
Outcomes of chronic diseases
Prescribing practices
Physician satisfaction
Risk of malpractice claims

feeling they had inadequate time with their physician in visits scheduled to last 5 minutes compared with visits scheduled to last 10 and 15 minutes, respectively.

Outcome of Chronic Diseases

There is no definite association between visit length and outcomes of chronic diseases. Greenfield et al. showed that patients who were trained to be more effective eliciting information from their physicians had improvements in their functional status and glycosylated hemoglobin levels.[9] Although the trained patients asked significantly more questions (1.04 per minute vs 0.30 per minute), the total visit length *with the physician* did not differ significantly (30 minutes for the trained patients vs 32 minutes for the untrained patients).

A similar study, by the same investigators, of patients with peptic ulcer disease found that patients in the training program asked more questions (5.5 per visit vs 4.0 per visit), had improved functional status, and were more satisfied with care than the control group.[10] However, there was no difference in the length of the patient–physician encounter (16 minutes in each group).

Similar results have been obtained by Kaplan et al. in groups of patients with hypertension and breast cancer.[11] They found that patient–physician communication patterns affected the health status of such patients. Office visits with more effective information gathering by patients, more information provided by physicians, more conversation by patients relative to the physician, and more expression of affect were all associated with better health and functional status.

These studies demonstrate that, for visits between 16 and 30 minutes in length, it is not the actual time spent with the physician that affects outcome, but rather what happens during that time. In the trials involving patient training, the total time patients devoted to their health care was increased because they spent more time learning the training program. However, the results show that not all of this time need be with a physician. The potential effects on these outcome measures of a further reduction of patient–physician visit time or total patient contact time with the health care system are not clear.

Prescribing Practices

Two studies have found an association between shorter visits and increased rates of medication prescriptions. Davidson et al. found that family practitioners in

New Brunswick, Canada, with a rate of prescriptions for elderly persons that was above the average also had a higher visit rate per day (27 vs 22), and a higher number of work days per year (225 vs 186).[12]

Grol et al., in a survey of general practitioners in the Netherlands, found that physicians who expressed feeling a lack of time in their medical practices had higher rates of writing prescriptions than physicians who did not feel a lack of time.[13]

More recently, Tamblyn et al. studied the appropriateness of prescriptions of anti-inflammatory drugs for hip pain and assessment of their complications in a cohort of family medicine and internal medicine physicians in Montreal, Canada.[14] They concluded that shorter visits, especially those less than 15 minutes, were a risk factor for inappropriate prescribing and management of gastrointestinal side effects.

Physician Satisfaction

Physicians' level of satisfaction is connected to their perception of the amount of time that they have to do their work. Twenty years ago, Mawardi found that one of the primary sources of physician satisfaction was patient relationships.[15] She also found that the primary source of dissatisfaction was "time pressure." Specifically cited were continuous on-call responsibilities, pressures of work load, and too little personal free time. Groenewegen and Hutten also found that time pressure was an important source of dissatisfaction in family physicians in the Netherlands and Great Britain.[16]

The 1995 Commonwealth Fund survey of physicians found that 29% of physicians were dissatisfied with the amount of time they spent with patients and only 31% were very satisfied.[2] Furthermore, 41% reported a decline in time with patients between 1992 and 1995. Female physicians had a greater rate of dissatisfaction (35%) than male physicians (28%). Physicians under 50 years of age had a greater rate of dissatisfaction (33%) than those older than 50 (23%). With respect to the influence of managed care, the survey found that physicians with at least half of their patients in managed care were nearly twice as likely to be dissatisfied with the amount of time spent with patients (38% vs 18%).

Physician satisfaction contributes to patient satisfaction. In a qualitative study, Grol et al. found a correlation between higher physician satisfaction and higher quality of care as assessed by communication patterns (e.g., explaining care to patients), attention to psychosocial aspects of care, and prescription rates.[13] The degree to which physician satisfaction affects other aspects of the quality of the patient-doctor relationship has not been studied.

Risk of Malpractice Claims

A physician's risk of malpractice claims is associated with visit length. Levinson et al. studied 59 primary care

physicians in Oregon and Colorado by audiotaping 10 consecutive office visits.[17] The physicians were classified as having fewer than two lifetime malpractice claims ("no claims physicians") or two or more lifetime malpractice claims ("claims physicians"). Primary care physicians from the "no-claims" group had longer routine visits than "claims" primary care physicians (18.3 vs 15.0 minutes). In addition, the length of the physician's visits was an independent predictor of the physician's malpractice claim status.

In a patient survey study, Hickson et al. found, by surveying patients, that patients of obstetricians with malpractice claims were more likely to report feeling rushed and spending less time during routine visits than patients of obstetricians with no previous claims.[18] One third of patients of physicians with a high rate of malpractice claims felt that they had spent less than 10 minutes with the physician compared with only 12% of patients of physicians with no history of malpractice claims. However, only the patients' perceptions of the time spent during visits were measured rather than actual time spent.

OPTIMAL VISIT LENGTH

According to the information presented above, determining the optimal visit length for patients and physicians would have the potential to improve our health care system. However, limited data are available to allow conclusions about optimal visit lengths. In all studies cited, many factors influence actual visit length, and many factors are likely to affect optimal visit length.

Visit length varies greatly between countries. For example, in Great Britain, average visit lengths for general practitioners are between 5 and 8 minutes,[16] whereas in the United States and Sweden, they are 10 to 20 minutes or more.[1,19,20] However, in Great Britain, many visits are strictly for medication refills and sicker patients are visited at home. In the United States, home visits are substantially less common, even for the sickest patients. Visit lengths vary significantly by specialty, even among primary care disciplines. In 1993, the average visit length for family practitioners in the United States was 20 minutes, while it was 26 minutes for general internists.[21]

In a British study by Roland et al., physicians who increased their average office visit length from 6.7 minutes to 7.4 minutes (face-to-face time) asked more questions related to health history and psychosocial concerns.[22] In addition, physicians with longer visits made more statements about health education and prevention. Using the same study group, Morrell et al. found a greater likelihood of detecting psychosocial concerns in the group with longer visits.[7] In another British study, Wilson et al. found that physicians who increased their average visit length from 7.1 to 8.2 minutes increased their rates of hypertension screening and health education activities.[23]

Camasso and Camasso studied a cohort of family practitioners in publicly supported primary care centers in the United States.[19] They found that the performance of immunizations, the taking of medical history related to cigarettes, alcohol, and social or family history, and preventive care aimed at females were significantly less frequent when the visit rate was above 3 per hour. They also found that physicians with visit rates of over 3.8 per hour were more likely to make referrals to specialists and to use ancillary staff for procedures.

Beisecker and Beisecker surveyed patients attending a U.S. university-based rehabilitation medicine clinic regarding attitudes toward information gathering during their visits and their effectiveness of information seeking.[24] For patients with a visit length below the median of 18 minutes, substantially less information seeking occurred, even for patients who rated their interest in information high. For visits longer than 18 minutes, the patient's interest in information became an important determinant of how much information seeking occurred.

Thus, longer visits seem to allow for more attention to several aspects of care, including increased patient participation, patient education, preventive health, and performance of immunizations. It appears that in the United States visit rates above 3 to 4 per hour are associated with suboptimal visit content. Because patient satisfaction is increased by increased patient participation and patient education activities,[4,5,11] it is plausible that a visit rate above 3 to 4 per hour would be associated with decreased patient satisfaction.

MANAGED CARE AND VISIT LENGTH

When considering the effect of managed care on visit length, a major concern is that economic or administrative forces may lead to an inappropriate reduction in the time available to see a patient. Managed care has been blamed for shorter patient visits. *Capitated* managed care provides incentives to care for the greatest number of patients and reduce the overall use of resources. Physicians' time is one potentially constrainable resource. This can be accomplished by reducing access to physicians or by reducing time spent with physicians once the patient has gained access. However, it is also plausible that an increased use of physicians' time could lead to equal or greater savings in other areas such as inpatient services. *Noncapitated* managed care is often provided in the context of a discounted fee-for-service arrangement. As fees become more discounted, income preservation demands that a greater patient volume be accommodated. This accommodation can be done by physicians increasing their number of working hours or by scheduling working hours more densely with work that generates revenue. However, the same financial consequences occur under a fully nonmanaged but heavily discounted fee-for-service arrangement.

Managed care may encourage the delegation of certain tasks to nonphysician providers, which may reduce the time patients spend with their physicians. However,

few physicians question the benefit of having office staff place a patient in an examination room and collect routine information related to the reason for the visit and selected vital signs. Furthermore, care such as counseling about medication side effects or monitoring of medication compliance or effect may be better performed by a clinical pharmacist than a physician. Thus, while such efforts may reduce the patient–physician visit time, if they are made without a reduction in the quality of care or quality of the patient visit, there should be no cause for concern.

Some limited data link reduction of visit length to the managed care setting. In his ground-breaking work conducted in the early 1970s, Mechanic compared physicians in prepaid practices with those in nonprepaid practices.[25] He found that 32 patients were seen per day in each setting. However, general practitioners in prepaid settings reported seeing patients 40 hours per week, while the nonprepaid physicians reported seeing patients 49 hours per week. He concluded that prepaid practice physicians responded to increased patient demand by processing patients more quickly, whereas nonprepaid physicians responded by working longer hours.

In 1993, Blendon et al. conducted a nationwide telephone survey of 1,000 randomly selected adults.[26] With respect to "adequacy of time spent" and "explanation of what was done" in the primary care setting, patients in a managed care plan had significantly lower scores than patients in Medicare or fee-for-service plans. The differences were even more pronounced in specialty care. However, actual visit lengths were not assessed.

In summary, although it is plausible that a managed care model would reduce physician visit lengths, the extent to which this actually occurs *because* of managed care remains unclear. It may not be managed care per se, but rather economic issues associated with managed care (primarily income preservation) that lead physicians or health care organizations to schedule shorter visits.

PRACTICAL STRATEGIES

Regardless of visit length, physicians must develop strategies to enhance the quality of care with the amount of time available. Some of the research discussed above points to physician and patient behaviors that can improve outcomes and satisfaction. These behaviors, along with strategies from the patient-doctor relationship and time management literature, can be effective tools for dealing with shorter visit times. Strategies can be considered in relation to the individual patient encounter, the practice environment, and the health care system.

Individual Patient Encounter

In the context of the individual patient encounter, the most productive technique for time management is to improve the physician's communication skills. Ample data show that patient-doctor communication factors affect patient satisfaction and outcomes such as medication compliance.[3–6,9,10] Patient-doctor communication is enhanced by the use of the patient-centered approach to interviewing,[27] which considers the patient's perspective of illness on equal ground with the physician's diagnostic imperative. Practicing physicians can learn these techniques,[28] and such training results in a better use of time.[29] Although it may at first seem that an approach that emphasizes physicians listening and asking open-ended questions would require more time, Stewart et al.[30] found that this is not the case if physicians follow specific strategies (Table 2):

Set an agenda early in the visit. This helps avoid late-arising concerns that may be the most important issues to the patient ("by the way, I've been having these chest pains . . .").[31] By not interrupting the patient's opening statement, and by using facilitating comments (also called "continuers," e.g., "is there anything else" or "uh-huh"), rather than immediately pursuing details of individual symptoms, the physician will have a better opportunity to discover the full range of patient concerns. This process rarely takes more than 2 to 3 minutes.[32]

Listening actively to the patient's story in his or her own terms rather than attempting to control the interview facilitates assessing the patient's emotional agenda.[33,34] Use of continuers and open-ended questions rather than closed-ended questions helps establish symptom content *and* emotional context.

Paying attention to the emotional agenda presented by the patient leads to enhanced opportunities to support and encourage the patient.[35–37]

Use empathic statements (Table 3) to assist therapeutic support of the patient.[38]

Solicit patient attribution. This helps manage uncertainty without wasting time. Ask the patient "what do you think is going on," or use other statements to solicit the patient's viewpoint.[34] This also allows for better understanding of how much uncertainty in the diagnosis of a symptom is acceptable to a patient and a more direct assessment of the patient's true concern ("does this abdominal pain mean that I have cancer?").

Take advantage of the patient's personal knowledge developed through continuity in the relationship.[39]

Establish agreement on goals of individual visits and medical care by involving patients in their care.[34]

Table 2. Elements of Patient-Centered Communication

Set agenda for a visit early in the visit
Pay attention to a patient's emotional agenda
Listen actively
  (rather than the physician controlling the interview)
Solicit patient attribution
Communicate empathically

Sources: White et al.[31]; Beckman and Frankel[32]; Brown et al.[33]; Beckman et al.[34]; Weston et al.[35]; Matthews et al.[36]; Suchman and Matthews[37]; and Cohen-Cole.[38]

<div style="text-align:center">**Table 3. Elements of Empathic Communication***</div>

Element	Example
Reflection	"You're really feeling overwhelmed by these problems."
Legitimization	"It must be upsetting to have these problems."
Respect	"You've been doing your best to cope."
Support	"I'd like to help."
Partnership	"Maybe we can work on these together."

*Source: Cohen-Cole.[38]

Practice Factors

Increasing physicians' control over their schedules can allow more flexibility to meet patient needs. This will also enhance physicians' sense of autonomy and control over their work environment and is likely to improve physician's motivation, morale, and satisfaction. Attention to these issues is important because satisfied physicians are more likely to have satisfied patients. Specific strategies might include appointment slots of variable lengths, blocks of time for patient care rather than assigning a specific appointment time to each patient, and building into the schedule "catch-up" time and time for same-day appointments. A system to minimize the visit "no-show" rate will reduce physician "down-time" and promote more effective scheduling.

A team approach may help manage a physician's time more effectively. This strategy involves the efficient use of support staff to reinforce the physician's message and elicit patients' needs. However, delegation of small tasks (e.g., brief counseling about medications) may increase inefficiency through task shifting. For more complex tasks, especially ones for which physicians may not be well trained, the use of nonphysician practitioners such as nurses, dietitians, clinical pharmacists, social workers, and case managers may improve physicians' efficiency.

Health Care System Factors

There are several steps that a health care system can take to promote quality in the face of time constraints (Table 4). In measuring physician productivity, a system that uses visit length (total time scheduled for patient care is a common measure) or number of visits is at least partially driven by the fact that they can be measured easily. Other measures of greater interest (such as health status, cost, or satisfaction) may be harder to track but are more important, and their assessment is an important safeguard for patients. Furthermore, incentives, when used, should be designed to enhance continuity, outcomes, and patient retention. Also of great interest are overall measures of patient panel health and quality of care. Finally, managed care organizations should adjust physicians' panel sizes for relevant health risk factors in order to facilitate optimal workloads.

<div style="text-align:center">**Table 4. Recommendations for Improving Medical Care in a Time-Constrained Environment**</div>

Limit visit rates to no more than 3 to 4 per hour
Flexibility in scheduling to accommodate varying patient needs
Improve training in patient-doctor communication skills
Include time management and practice of team-building skills in training curricula

Physician time should be considered a resource just like other components of the health care system. For non-procedural providers, it is the predominant source of income. Health systems should make efforts to understand how to allocate time according to patients' needs rather than on a fixed visit schedule and to include patients' input in these decisions. Many patient visits may be facilitated if it is made clear how patients can schedule longer appointments if this is desired or needed.

The positive potential of managed care should be explored and exploited to the maximum extent possible. By establishing a population for which a physician is responsible, capitation may allow a rethinking of the system to respond to patient needs more readily. For example, follow-up can often be done by telephone or home visits or by nonphysician providers. It is important, however, to include these types of activities when assessing a physician's workload and time allocation.

Information systems should be designed to facilitate the flow of work. Examples include online prescription and diagnostic test ordering, online referral processes, and online insurance-specific formulary information. Investments in clinical information systems should be made to optimize the use of scarce resources such as physician time.

EDUCATIONAL APPROACHES

Some of the major challenges that we face in the changing medical marketplace are how to teach medical students and residents about patient-doctor relationships in managed care environments, and how to teach about time management in all clinical arenas. We believe, first and foremost, that making explicit the need for these items as curricular elements will have a beneficial effect on trainees. Some institutions already offer courses on patient-doctor relationships to students, but they are often in the preclinical years. We believe that residents and advanced students should receive follow-up training in patient-doctor relationship issues. Finally, we believe that enough role models (i.e., experienced, efficient clinicians) should be available in training environments—without this, educational efforts will be significantly hampered.

Communication Skills

Creating the best possible patient-doctor relationship requires many skills. Managed care environments present

more challenges to and opportunities for effective communication and maintenance of patient–physician relationships.[40–42] Emphasis should be on teaching these skills effectively using seminars, videotaped reviews, direct observation of visits, standardized patients, and other strategies whose effectiveness are based on evidence.

Time Management

For trainees trying to learn the biomedical issues that are relevant to patient care, attention to more nebulous issues such as time management may seem misplaced. Although time management is a vital part of how we handle all of our work, we believe that teaching it is best suited to the outpatient setting. As part of the curriculum for trainees, consideration of how to use time most efficiently is important. In the context of a patient visit, this includes using the face-to-face time *and* the non–face-to-face time efficiently. We believe that the most effective tool for the former is enhanced patient–physician communication. The latter component, which includes activities such as charting, finding visit-related information, and communicating with other providers is not well suited to generalizations. However, we believe that the fundamental principles are ready access to information and the elimination of work that has little or no value.

Managing Inefficiency

One way to learn efficiency is to follow an experienced, efficient clinician. Specific focus areas include efficiency in the documentaton and use of information. For example, trainees should be taught to increase efficiency when dealing with laboratory reports and other clinical material by touching each piece of paper only once—reading it and acting on it. Another learning strategy is to videotape selected trainee visits and review them with an emphasis on efficiency and time management.

Managing Uncertainty

Many of the clinical problems that we face have inherent uncertainty. Uncertainty is a difficult concept for trainees to come to terms with, yet this must be accomplished to allow them to become efficient practitioners. Efforts to assist trainees in this area should be concentrated on biomedical issues that allow assessment of the risk of uncertainty and on training physicians how to help patients deal with uncertainty. We believe that helping patients deal with uncertainty is best facilitated by a strong patient-doctor relationship and good communication skills.

Precepting Issues

Outpatient teaching carries with it additional and unique time-management issues.[43] It is vital for faculty members to help trainees build patient-doctor relationships. It is also vital to consider physician time as a resource whose efficient use must be taught. A teaching clinic should have the teaching room located centrally and staffed with enough faculty to minimize waiting time for trainees. The discussion of patients should be tailored to the time available and the level of the learner. Finally, enough role models (i.e., experienced, efficient clinicians) should be available—without this, educational efforts will be significantly hampered.

QUESTIONS AND RECOMMENDATIONS

In spite of a significant amount of research, there are many unanswered questions about time and the patient–physician relationship. Particularly important are how to determine the optimal visit length for a given patient and clinical problem and the optimal visit frequency for patients with chronic diseases. The question of how managed care influences visit length is also very timely, and the answer is far from clear. Finally, the best ways to educate trainees and reeducate practicing physicians in time management remain unknown. All of these areas, and others, are fertile ground for future research.

Nonetheless, we feel that certain recommendations can be made. It appears that, in the United States at least, visit rates above 3 to 4 per hour may lead to suboptimal visit content, decreased patient satisfaction, increased patient turnover, or inappropriate prescribing. To make the most of whatever visit time is available, we recommend that medical training contain improved instruction in patient-doctor relationships. Furthermore, this training should be extended to all levels of practitioners including students, residents, and practicing physicians. Based on limited data,[28] we believe that this training is best conducted in a workshop setting rather than a didactic setting but acknowledge that the best training methods have not yet been determined.

REFERENCES

1. Davidoff F. Time. Ann Intern Med. 1997;127:483–5.
2. Collins KS, Schoen C, Sandman DR. The Commonwealth Fund Survey of Physician Experiences with Managed Care. New York, NY: The Commonwealth Fund; 1997.
3. Robbins JA, Bertakis KD, Helms LJ, Azari R, Callahan EJ, Creten DA. The influence of physician practice behaviors on patient satisfaction. Fam Med. 1993;25:17–20.
4. Laine C, Davidoff F, Lewis CE, et al. Important elements of outpatient care: a comparison of patients' and physicians' opinions. Ann Intern Med. 1996;125:640–5.
5. Kaplan SH, Greenfield S, Gandek B, Rogers WH, Ware JE Jr. Characteristics of physicians with participatory decision-making styles. Ann Intern Med. 1996;124:497–504.
6. Like R, Zyzanski SJ. Patient satisfaction with the clinical encounter: social psychological determinants. Soc Sci Med. 1987;24:351–7.
7. Morrell DC, Evans ME, Morris RW, Roland MO. The "five minute" consultation: effect of time constraint on clinical content and patient satisfaction. BMJ. 1986;292:870–3.

8. Ridsdale L, Carruthers M, Morris R, Ridsdale J. Study of time availability on the consultation. J R Coll Gen Pract. 1989;39:488–91.

9. Greenfield S, Kaplan SH, Ware JE, Yano EM, Frank HJL. Patient participation in medical care: effect on blood sugar and quality of life in diabetes. J Gen Intern Med. 1988;3:448–57.

10. Greenfield S, Kaplan S, Ware JE Jr. Expanding patient involvement in care. Ann Intern Med. 1985;102:520–8.

11. Kaplan SH, Greenfield S, Ware JE. Assessing the effects of physician-patient interactions on the outcomes of chronic disease. Med Care. 1989;27(suppl.):S110–27.

12. Davidson W, Molloy DW, Somers G, Bedard M. Relation between physician characteristics and prescribing for elderly people in New Brunswick. Can Med Assoc J. 1994;150:917–21.

13. Grol R, Mokkink H, Smits A, et al. Workload and job satisfaction of general practitioners and the quality of patient care. Fam Pract. 1985;2:128–35.

14. Tamblyn R, Berkson L, Dauphinee WD, et al. Unnecessary prescribing of NSAIDs and the management of NSAID-related gastropathy in medical practice. Ann Intern Med. 1997;127:429–38.

15. Mawardi BH. Satisfaction, dissatisfaction, and causes of stress in medical practice. JAMA. 1979;241:1483–6.

16. Groenewegen PP, Hutten JBF. Workload and job satisfaction among general practitioners: a review of the literature. Soc Sci Med. 1991;32:1111–9.

17. Levinson W, Roter DL, Mullooly JP, Dull VT, Frankel RM. Physician-patient communication: the relationship with malpractice claims among primary care physicians and surgeons. JAMA. 1997;277:553–9.

18. Hickson GB, Clayton EW, Entman SS. Obstetrician's prior malpractice experience and patients' satisfaction with care. JAMA. 1994;272:1583–7.

19. Camasso MJ, Camasso AE. Practitioner productivity and the product content of medical care in publicly supported health centers. Soc Sci Med. 1994;38:733–48.

20. Andersson SO, Mattsson B. Length of consultations in general practice in Sweden: views of doctors and patients. Fam Pract. 1989;6:130–4.

21. Lowes RL. Are you expected to see too many patients? Med Econ. 1995;72:52–9.

22. Roland MO, Bartholomew J, Courtenay MJF, Morris RW, Morrell DC. The "five minute" consultation: effect of time constraint on verbal communication. BMJ. 1986;292:874–6.

23. Wilson A, McDonald P, Hayes L, Cooney J. Health promotion in the general practice consultation: a minute makes a difference. BMJ. 1992;304:227–30.

24. Beisecker AE, Beisecker TD. Patient information-seeking behaviors when communicating with doctors. Med Care. 1987;28:19–28.

25. Mechanic D. The organization of medical practice and practice orientations among physicians in prepaid and nonprepaid primary care settings. Med Care. 1975;13:189–204.

26. Blendon RJ, Knox RA, Brodie M, Benson JM, Chervinsky G. Americans compare managed care, Medicare, and fee for service. J Am Health Policy. 1994;4:42–7.

27. Smith RC, Hoppe RB. The patient's story: integrating the patient- and physician-centered approaches to interviewing. Ann Intern Med. 1991;115:470–7.

28. Levinson W, Roter D. The effects of two continuing medical education programs on communication skills of practicing physicians. J Gen Intern Med. 1993;8:318–24.

29. Ridsdale L, Morgan M, Morris R. Doctor's interviewing technique and its response to different booking time. Fam Pract. 1992;9:57–60.

30. Stewart M, Brown JB, Weston WW. Patient-centred interviewing, III: five provocative questions. Can Fam Phys. 1989;35:159–61.

31. White J, Levinson W, Roter D. `Oh by the way . . .' The closing moments of the medical visit. J Gen Intern Med. 1994;9:24–8.

32. Beckman HB, Frankel RM. The effect of physician behavior on the collection of data. Ann Intern Med. 1984;101:692–6.

33. Brown JB, Weston WW, Stewart MA. Patient-centred interviewing II: understanding patient's experiences. Can Fam Phys. 1989;35:153–7.

34. Beckman H, Markakis K, Suchman A, Frankel R. Getting the most from a 20 minute visit. Am J Grastroenterol. 1994;89:662–4.

35. Weston WW, Brown JB, Stewart MA. Patient-centred interviewing, I: understanding patient's experiences. Can Fam Phys. 1989;35:147–51.

36. Matthews DA, Suchman AL, Branch WT. Making "connexions": enhancing the therapeutic potential of patient-clinician relationships. Ann Intern Med. 1993;118:973–7.

37. Suchman AL, Matthews DA. What makes the patient-doctor relationship therapeutic? Exploring the connexional dimension of medical care. Ann Intern Med. 1988;108:125–30.

38. Cohen-Cole SA. Function 2: building rapport and responding to patient's emotions. In: The Medical Interview: The Three-Function Approach. St. Louis, Mo: Mosby Year Book; 1991:21–8.

39. Weyrauch KF, Rhodes L, Psaty BM, Grubb D. The role of physician's personal knowledge of the patient in clinical practice. J Fam Pract. 1995;40:249–56.

40. Council on Ethical and Judicial Affairs, American Medical Association. Ethical issues in managed care. JAMA. 1995;273:330–5.

41. Emanuel EJ, Dubler NN. Preserving the physician-patient relationship in the era of managed care. JAMA. 1995;273:323–9.

42. Gordon GH, Baker L, Levinson W. Physician-patient communication in managed care. West J Med. 1995;163:527–31.

43. Irby DM. Teaching and learning in ambulatory care settings: a thematic review of the literature. Acad Med. 1995;70:898–931.