Part-time Physicians

Physician Workload and Patient-Based Assessments of Primary Care Performance

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Objective: To examine the relationship between the number of hours physicians work and patients’ assessment of the physician.

Design: Cross-sectional study with physician and patient surveys.

Setting: Primary care practices in Massachusetts.

Participants: A random sample of 6810 Massachusetts state employees in 15 different health plans.

Main Outcome Measures: Eleven summary scales measuring 7 essential elements of primary care. Information was derived from the Primary Care Assessment Survey, a validated patient-completed questionnaire.

Results: Physicians were classified into 3 groups according to their reported hours of work: “overtime” (>65 h/wk), “full time” (40-65 h/wk), and “part time” (<40 h/wk). There was no statistically significant difference between the 3 groups of physicians in 10 of the 11 measures of primary care performance. Physicians who worked more than 65 hours per week were found to score significantly higher in the visit-based continuity of care category than physicians working fewer hours. Physicians working more than 65 hours per week were also found to be significantly less satisfied with the amount of time they had for family and personal life than the other 2 groups.

Conclusions: Part-time physicians perform as well as full-time physicians in most aspects of primary care, including all interpersonal aspects of care, as reported by patients. Patients of physicians working more than 65 hours per week experienced higher levels of visit-based continuity of care than patients of physicians working fewer hours, but this appears to carry a cost to those physicians in the area of personal and professional satisfaction. Subsequent research should examine the relationship between physician workload and technical aspects of care.

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THE WORKING environment for US primary care physicians is rapidly changing. Today, there is increasing pressure from the government, insurers, employers, and patients for physicians to document the quality of their care and the efficiency with which they provide it. With this emphasis on both quality and productivity, physicians continue to work long hours, both in direct patient care and in patient-related activities. Many physicians also spend time in other professional activities, such as teaching, administration, and research. The average US physician worked 58 hours per week in 1997. The average work week is 57 hours for general and family practitioners and 61 hours for internists. These rates have remained stable for more than a decade.1

Most studies of physician work patterns have been descriptive, noting the difference between male and female physicians in number of hours worked.2,4 The finding that female physicians worked fewer hours, on average, than male physicians has led to concerns about the role of reduced working hours in the medical profession. At the extreme, the issue of part-time physicians led some critics to question the value of the investment of a medical education in women. A Commentary in JAMA stated

It is all going to be wrong if a third of the openings in medical school have been awarded to part-time professionals or misplaced housewives. One hopes that the new woman physician learns quickly the value of her considerable profession and its consequent considerable income, and frees herself of many things that can be done by others.6

In response to concerns about part-time medical professionals, several studies measured the effect of physician work hours on physician productivity (eg, number of services provided).5,7-11 There has been no attempt, however, to measure the effect of physician workload on the physician-
SUBJECTS AND METHODS

STUDY DESIGN

Full details of the study design have been documented elsewhere. The study population consisted of adult employees of the Commonwealth of Massachusetts who were enrolled in any of 12 health plans offered to state workers. The demographics of Massachusetts state employees are similar to those of employed adults nationally, except that a larger proportion of Massachusetts state employees are college educated and in older age groups (45 years and older) than adults employed in other states. Five different models of managed care were represented: managed indemnity, point-of-service, independent practice association/network-model health maintenance organization (HMO), group-model HMO, and staff-model HMO. Between January and April 1996, the Primary Care Assessment Survey (PCAS) was administered to a random sample of 10,200 eligible state employees, stratified by health plan. Any employee with health insurance registered through the Group Insurance Commission, Boston, was considered eligible. The 10,200 people sampled comprised 12% of the total 81,267 people employed by the Commonwealth. A standard 3-step mail survey was used. The overall response rate was 68.5% (n = 7204), with 6610 responses obtained by mail and 394 obtained by telephone. As is customary with survey research, respondents were older and disproportionately female compared with nonrespondents (P = .001). Data from phone respondents, whose characteristics and responses are presumed to approximate those of nonrespondents, suggest that nonresponse was unrelated to patients’ assessments of their primary physician (ie, telephone and mail respondents’ assessments of their primary physician were statistically equivalent).

PATIENT SURVEY

In the PCAS, patients were asked to identify a “regular personal doctor.” Only patients who had an established relationship with a primary clinician were asked to fill out the remainder of the questionnaire. All questions referenced the entire clinician-patient relationship (ie, they were not visit-specific). The PCAS assesses 7 domains of performance through 11 summary scales: accessibility ( organizational and financial), continuity of care (longitudinal and visit-based), comprehensiveness (contextual knowledge of patient and preventive counseling), integration, clinical interaction (clinician-patient communication and thoroughness of physical examinations), interpersonal treatment, and trust.

Patients were also asked how satisfied they were with their regular physician. Response choices were “completely satisfied,” “very satisfied,” “somewhat satisfied,” “neither satisfied nor dissatisfied,” “somewhat dissatisfied,” “very dissatisfied,” and “completely dissatisfied.” Last, patients were asked if they would recommend their physician to their family and friends. Response choices were “definitely yes,” “probably yes,” “not sure,” “probably not,” and “definitely not.”

Finally, patients were asked questions about their sociodemographic status and their health, including functional health status and a set of 14 questions regarding the presence of common chronic medical conditions (such as hypertension and diabetes).

PHYSICIAN SURVEY

A survey of the study participants’ primary care physicians was conducted in March and May 1997. We contacted 2078 physicians, using a 3-stage mail survey protocol, supplemented with express mail follow-up to a sample of nonrespondents. A total of 158 physicians were excluded owing to bad addresses or eligibility. Overall, 992 physicians responded to the survey (51.7% response rate). Obtaining higher rates of response from physicians is historically difficult and is becoming even more difficult. The rate that we obtained is consistent with other published surveys of physicians.

Respondents and nonrespondents did not differ in sex or number of years since medical school graduation. A slightly greater percentage of respondents than nonrespondents were generalists (81% vs 78%, respectively; P = .05). Physicians were asked questions about their health plan, their practice, and the quality of care they provided. Physicians answered questions concerning the total hours spent per week in professional activities and the proportion of professional time spent in different activities during a typical week, including the percent of professional time that they spent in direct patient care (hospital and office-based), patient-related work (doing paper work and obtaining authorization for care), and other professional activities (teaching, research, and administration). These items contributed to the workload estimates in our analysis.

Physicians were asked about their overall satisfaction as well as their level of satisfaction with 6 different aspects of their practice: the quality of care provided, the potential to achieve professional goals, the amount of time spent with each patient, their total earnings, personal autonomy, time available for family and personal life, and the incentives for high quality in their practice. These items were adapted from the Medical Outcomes Study physician background questionnaire. Response choices to all items were as follows: “very satisfied,” “satisfied,” “neither
satisfied nor dissatisfied,” “dissatisfied,” and “very dissatisfied.” Physicians were also asked whether they would recommend their specialty to a qualified medical student. Response choices were “definitely yes,” “probably yes,” “probably not,” and “definitely not.”

DEFINITION OF PHYSICIAN WORK STATUS

For purposes of analysis, physicians were divided into 3 groups according to the total number of hours per week they reported spending in all types of professional activities (patient care, patient-related work, and other professional activities). Physicians working less than 40 hours per week were classified as “part time”; those working 40 to 65 hours per week were classified as “full time”; and those working 65 hours or more per week were classified as “overtime.”

There are no standard definitions in the medical literature of part-time and overtime physicians. We chose to classify physicians working less than 40 hours per week as part time because this is consistent with the definition used by other studies on this subject in the medical literature.3,4,11 The American Medical Association has no definition of a part-time physician (although it does define an “inactive” physician as a physician working less than 20 hours per week).12 We tested the sensitivity of our definition using definitions of part time as working less than 30 hours per week and less than 25 hours per week and found no difference in our results.

We chose a threshold of 65 hours per week to define overtime physicians because this is consistently higher than the average number of hours worked per week reported by US physicians in the past 10 years.1

STATISTICAL ANALYSIS

The analytic sample was composed of patients who responded to the mailed questionnaire who reported having a regular personal physician and whose physician completed the physician questionnaire (n = 2774). To identify differences in primary care physician performance, a series of regression models were constructed. Each model had 1 of the 11 PCAS scores as its dependent variable. Each model included binary indicators of physician workload and control variables representing the physicians’ age and sex, the patients’ sociodemographic characteristics (age, sex, race, years of education, and household income), the length of time the patient was enrolled in the current health plan, and binary indicators for 14 chronic medical conditions. The models were used to determine the adjusted mean PCAS scores for each group of physicians (part time, full time, and overtime), holding all other variables constant at their mean. The adjusted means of these 3 groups were compared using an F test. If the F test was found to be significant (showing an overall significant difference between group means), then t tests were run between individual groups to compare each group with the others. To assess the sensitivity of results to statistical controls, unadjusted means were also compared. Separate models were also run with control variables for health care plan type and physician specialty. No substantive differences in results occurred, so results adjusted for the variables described earlier in the article are reported. Sensitivity of results was also tested against different definitions of workload status for physicians, with no change in overall results. Other definitions of part time that were tested included working less than 30 hours per week (total hours) and working less than 25 hours per week in patient care. We tested for physician sex as a possible modifier of workload effects by interacting physician sex with the workload indicators in each model. There was no significant interaction effect between workload and physician sex in any of the scales.

Two additional models using binary indicators of patient satisfaction (satisfaction with physician and definitely recommending your physician) were also constructed using logistic regression. Patients were classified as satisfied if they answered “very satisfied” or “completely satisfied” to an item on overall satisfaction with their physician. Patients were classified as recommending their physician if they answered “definitely yes” to the item on the survey regarding recommending their physician to family and friends. These models were adjusted for the same physician and patient variables as described earlier in this article.

Last, we analyzed the relationship between physician satisfaction and workload status. The analysis included each of 6 areas of satisfaction with professional life, as well as separate items on overall job satisfaction and whether the physician would recommend his or her specialty to a qualified medical student. Physicians were classified as satisfied with a particular area of his or her professional life if they indicated that they were satisfied or very satisfied in responding to that item. Physicians were classified as recommending their specialty if they answered definitely yes in responding to that item. Separate models were constructed using each of the binary indicators of physician satisfaction as the dependent variable. Each model included binary indicators of physician workload and control variables representing physician age and sex. The models were used to predict the proportion of physicians in each group who were satisfied with each aspect of their professional life, adjusted for physician sex and age. The proportion of satisfied physicians in the 3 workload groups were compared using an F test, with t tests run between groups when the F test was significant.

RESULTS

CHARACTERISTICS OF PART-TIME AND FULL-TIME PHYSICIANS AND THEIR PATIENTS

Table 1 describes the sociodemographic characteristics of the 3 groups of physicians: part time, full time, and overtime. Most physicians surveyed (70%) were in the full-time category (working between 40 and 65 h/wk). This group worked an average of 48 hours per week. Only 8% of physicians in our study worked less than 40 hours per week and 22% worked more than 65 hours per week. The average number of working hours for the part-time group (mean, 28 hours) was significantly less than those working full-time (mean, 53 hours) or overtime (mean, 73 hours) (P < .001).

The overtime and full-time physician groups had a significantly greater proportion of men (84% and 77%, respectively) compared with the part-time group (40%, respectively).
P < .001). Both full-time and overtime physicians spent a greater proportion of their working time (11% and 14%, respectively) in other professional activities (teaching, administration, and research) compared with part-time physicians (5%) (P < .05). There was no significant difference between the 3 groups in the average visit duration with patients. All 3 workload groups had a similar mix of specialists and generalist primary care providers. Also, part-time and full-time physicians appeared to serve similar groups of patients. There was no significant difference in the proportion of patients with chronic disease (P = .90), the proportion of patients in good to excellent health (P = .90), or the average number of visits per patient in the last 6 months (P = .90).

**PHYSICIAN PERFORMANCE AND WORKLOAD**

Table 2 compares the 3 groups’ primary care performance on 11 PCAS scales and 2 measures of satisfaction. The adjusted mean PCAS score is presented for each group. There were no significant performance differences between groups except in the area of visit-based continuity of care (P = .006). Overtime physicians performed significantly better than full-time physicians on this scale (P = .001).

Examining an item on the access scale, we found that the majority of patients in all 3 groups reported being seen within 24 hours by someone in their physician’s practice when they were sick. But, patients with part-time or full-time physicians reported seeing their personal physician significantly less often than patients with overtime physicians, either when they were sick or well (P < .001) (continuity of care scale items).

On the measures of global patient satisfaction, the groups did not differ in proportion of patients who were completely satisfied with their physician. On the other hand, physicians in the overtime group had a greater proportion of patients who would definitely recommend them (65%) compared with full-time (60%) and part-time physicians (56%) (P = .06).

**PHYSICIAN SATISFACTION WITH PART-TIME WORK**

Table 3 compares the 3 physician groups on the basis of satisfaction with 6 specific aspects of their professional life, as well as 2 indicators of global satisfaction: overall satisfaction (based on a separate question in the survey, not a summary score) and recommendation of specialty to a medical student. Physicians working more than 65 hours per week were significantly less satisfied with the amount of time they had available for family and personal life compared with physicians in the other 2 groups (P = .001). Physicians working more than 65 hours per week were also significantly less satisfied with the amount of time they spent with each patient (P = .01) than the full-time and part-time physicians. There was no significant difference in satisfaction with the quality of care provided, earnings from practice, degree of personal autonomy, or professional goal attainment among any of the 3 physician groups. There were no significant differences among the 3 groups in overall satisfaction or recommendation of specialty to a medical student.

This study found no significant difference in the experience of patients of part-time, full-time, and overtime physicians.

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**Table 1. Select Physician Characteristics According to Workload**

<table>
<thead>
<tr>
<th></th>
<th>Part Time† (n = 78)</th>
<th>Full Time† (n = 644)</th>
<th>Overtime† (n = 199)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mean age, y</td>
<td>47 (12)</td>
<td>48 (9)</td>
<td>49 (9)</td>
</tr>
<tr>
<td>Male sex, %</td>
<td>40 (49)</td>
<td>77 (42)</td>
<td>84 (37)</td>
</tr>
<tr>
<td>Mean hours of work per week</td>
<td>28 (8)</td>
<td>53 (7)</td>
<td>73 (9)</td>
</tr>
<tr>
<td>Time spent in patient care, h</td>
<td>95 (9)</td>
<td>89 (16)</td>
<td>86 (19)</td>
</tr>
<tr>
<td>Generalist physicians (family practitioners, general internists, or general practitioners), %</td>
<td>79 (41)</td>
<td>82 (38)</td>
<td>79 (41)</td>
</tr>
<tr>
<td>Mean visit duration, min New patients</td>
<td>32 (13)</td>
<td>31 (12)</td>
<td>33 (13)</td>
</tr>
<tr>
<td>Established patients</td>
<td>17 (10)</td>
<td>16 (6)</td>
<td>16 (7)</td>
</tr>
</tbody>
</table>

* Sample sizes represent the number of physicians responding in each workload category. Numbers in parentheses are SDs.
† Part time indicates less than 40 hours per week; full time, 40 to 64 hours per week; overtime, 65 or more hours per week.
‡ Significantly different from part time, P < .05.
§ Significantly different from full time, P < .05.

**Table 2. Patient-Based Assessments of Primary Care, by Physician Workload**

<table>
<thead>
<tr>
<th></th>
<th>Part Time† (n = 191)</th>
<th>Full Time† (n = 1943)</th>
<th>Overtime† (n = 548)</th>
<th>F Test</th>
</tr>
</thead>
<tbody>
<tr>
<td>Access</td>
<td>Financial</td>
<td>66</td>
<td>66</td>
<td>65</td>
</tr>
<tr>
<td>Organization</td>
<td>71</td>
<td>69</td>
<td>68</td>
<td>.41</td>
</tr>
<tr>
<td>Continuity</td>
<td>Longitudinal</td>
<td>75</td>
<td>79</td>
<td>80</td>
</tr>
<tr>
<td>Visit-based</td>
<td>82</td>
<td>81</td>
<td>86§</td>
<td>.006</td>
</tr>
<tr>
<td>Comprehensiveness</td>
<td>Knowledge of the patient</td>
<td>57</td>
<td>56</td>
<td>56</td>
</tr>
<tr>
<td></td>
<td>Preventive counseling</td>
<td>53</td>
<td>48</td>
<td>48</td>
</tr>
<tr>
<td>Integration</td>
<td>68</td>
<td>70</td>
<td>70</td>
<td>.70</td>
</tr>
<tr>
<td>Clinical interaction</td>
<td>Physical examinations</td>
<td>81</td>
<td>80</td>
<td>80</td>
</tr>
<tr>
<td></td>
<td>Communication</td>
<td>81</td>
<td>80</td>
<td>79</td>
</tr>
<tr>
<td></td>
<td>Interpersonal treatment</td>
<td>80</td>
<td>79</td>
<td>80</td>
</tr>
<tr>
<td>Trust</td>
<td>77</td>
<td>77</td>
<td>77</td>
<td>.84</td>
</tr>
<tr>
<td>Specific aspects of patient satisfaction</td>
<td>Completely satisfied with physician, %</td>
<td>35</td>
<td>32</td>
<td>33</td>
</tr>
<tr>
<td></td>
<td>Definitely recommend physician, %</td>
<td>56</td>
<td>60</td>
<td>65§</td>
</tr>
</tbody>
</table>

* All values are given as mean scores unless otherwise indicated. Means have been adjusted for physician age and sex and patient age, race, sex, education, income, time in plan, and chronic medical conditions. Sample sizes represent the number of patients responding in each workload category.
† Part time indicates less than 40 hours per week; full time, 40 to 64 hours per week; overtime, 65 or more hours per week.
‡ Significantly different from full time, P < .05.
§ Significantly different from part time, P < .05.
physicians except in the domain of visit-based continuity of care, where physicians who worked overtime provided more continuity of care than full-time or part-time physicians. In the context of other findings from this study, however, the differences in visit-based continuity of care that are associated with physician’s work schedule are relatively small.17 These findings from our study show that the differences in visit-based continuity of care associated with different models of managed care (ie, managed indemnity, independent practice association/network-model, group-model HMO, and staff-model HMO) are 5 times larger than the differences associated with physician workload (SD, 0.89 vs 0.17). Taken together, these findings suggest that organizational structure (eg, health plan type, practice norms and office system) has a greater effect on visit-based continuity of care than physician work hours. In other words, working long hours in the office alone cannot ensure continuity of care. The office system and physician clinic schedule must be designed to facilitate continuity of care and to balance the trade-offs between immediate access and continuity of care.

Part-time physicians scored close to full-time physicians on all other aspects of primary care that were measured. One possible explanation is that although part-time physicians are less available overall, they may take on a smaller panel of patients and therefore have as much time and energy available for each individual patient as their full-time counterparts. Part-time physicians may also limit their hours spent in other professional activities to maximize their time available for direct patient care. Another possible explanation is that part-time (and full-time) physicians provide less continuity of care than over-time physicians, but the difference in continuity of care is not significant enough to their patients to affect the patient’s assessment of their physician in any other aspect of the physician-patient relationship. That is, while most studies suggest that visit-based continuity of care is important to patients,23-25 the magnitude of differences in visit-based continuity of care that are associated with physicians’ work schedules appear to be small enough as to not impinge on the patients’ overall assessment of the care received through that physician. On the other hand, the decreased continuity of care provided by physicians working less than 65 hours per week may influence certain aspects of patient satisfaction. Although all 3 groups of physicians had a similar proportion of patients who were completely satisfied with their care, patients of overtime physicians were significantly more likely than patients of full-time or part-time physicians to definitely recommend their physician to family and friends. This may reflect an attitude on the part of patients that although having a physician with reduced office hours may be satisfactory for them, this arrangement may not work for everyone.

A discussion of workload and continuity of care is not complete without recognizing that within the category of full-time physicians, there are physicians who are effectively functioning as part-time clinicians, devoting a large portion of time to research, teaching, or administration and a limited number of hours to patient care. In our sensitivity analysis, where part-time status was redefined by clinical hours (hours spent in patient care), full-time physicians with limited clinical hours were categorized as part-time. The results using this definition were the same. It is also important to note that the effect of working part-time was no different for male or female physicians.

In terms of physician satisfaction, part-time physicians were equally satisfied with work and personal life compared with full-time physicians. Physicians working more than 65 hours per week were much less likely to be satisfied with their personal and family time. These findings are in keeping with studies of physician satisfaction that have identified time pressures as the major source of job dissatisfaction.26-30 We recognize that there are many influences on the decision to work long hours (such as financial pressures and pressure from colleagues) and some physicians may be practicing in an environment (eg, a rural area) in which limiting hours is next to impossible. However, if physicians are working long hours primarily to maintain a good relationship with their patients, this study’s findings suggest that long hours are not necessary to achieve high-quality patient relationships.
Both male and female physicians have multiple roles to fulfill. As well as the role of physician, their roles might include researcher, educator, administrator, or parent. To fulfill these multiple responsibilities, some clinicians choose to devote less than full-time hours to patient care. The solution to the multiple role conflict is obviously a personal choice. These findings support the view that primary care physicians can exercise their choice in the matter with little effect on the core elements of primary care experienced and reported by patients.

LIMITATIONS

In this study, a relationship between hours of work and performance can be observed, but it is impossible to infer causality from this relationship. Before this study began, physicians self-selected to be part time (or not) and patients selected part-time physicians (or not). Thus, the findings of the study reflect the real world in which physicians have defined a particular professional schedule, and patients have chosen particular physicians, rather than a randomized trial, which would reflect what happens when physicians have part-time hours imposed on them.

A second limitation is that the study is confined to a population of insured adults. The associations observed between physician work hours and performance can be generalized to other populations of healthy insured workers in the United States, but other populations, particularly those who are vulnerable owing to socioeconomic or medical factors, need to be studied separately. These populations may have a greater need for continuity of care and therefore other areas of primary care performance could be affected by physician work hours and availability.

A third limitation to this study is that we are unable to assess the technical aspects of physician performance. Technical competence and general knowledge base may be the areas that suffer most when a physician reduces the number of hours he or she works and the number of patients he or she sees. The PCAS does not attempt to measure technical aspects of care because of known limitations in patient-based assessments of this domain.31

CONCLUSIONS

To our knowledge, this is the first study that examines the association between physician workload and the primary care experience of patients. The performance of part-time physicians was equal to that of full-time physicians in most aspects of primary care experienced and reported by patients. Patients of physicians working more than 65 hours per week experienced higher levels of visit-based continuity of care than patients of physicians working fewer hours. These findings suggest that working long hours may not be necessary to achieve good patient relationships. The organizational structure within which a physician works may have a greater influence on visit-based continuity of care than physician work hours alone. Further research is required to answer the question of how physician workload affects technical performance.