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It's about time: Physicians' perceptions of time constraints in primary care medical practice in three national healthcare systems

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Abstract

Background—As physicians are pressured to deliver an increasing number of preventive services, follow guidelines, engage in evidence-based practice, and deliver patient-centered care in managerially driven organizations, they struggle with how much control they have over their time.

Methods—Three parallel experiments on clinical decision making were conducted in Germany, the United Kingdom, and the United States with 128 physicians per country. We asked physicians how much time they were allocated and how much time they needed for high quality care for a new patient appointment, a routine consultation, and a complete physical. We also asked them how much control they had over their time in the office and spending adequate time with patients.

Findings—German, British, and American physicians were allocated 16 / 11 / 32 minutes for a new patient appointment, 6 / 10 / 18 minutes for a routine visit, and 12 / 20 / 36 minutes for a complete physical, but felt they needed more time. Over half of German and American physicians felt that always or usually had control over the hours they were required to be in their office or spending sufficient time with their patients while less than half of British physicians felt this way.

Interpretation—German physicians had the least time allocated and needed for each type of appointment. American physicians had the most time allocated and needed for each type of appointment. However, British physicians felt they had the least control over time in their office and spending sufficient time with patients.

Background

Major transformations in health care in the more developed world over several decades are affecting the way physicians perform, experience, and evaluate their own clinical work. In North America and Western Europe in particular, an ideology of "clinical management" now shapes and justifies managerially driven organizations of generalist physician practices,

while payers and professional bodies pressure physicians to provide an increasing number of preventive services, to engage in "evidence-based" practice, and deliver "person-centered care." These trends are manifested in struggles over how much time practitioners have with patients, how they actually spend that time, and how much control they have over their own time. At the societal level, availability and use of time has become a focus of ideological tension between an emergent "rationalized" and more traditional "professional" view of how to deliver primary care. ¹ Hence time is acutely important in designing corporate medical practices and national health care systems.

Time matters. A recent ² systematic review found no studies supporting a direct association between doctor stress and average appointment length, but found longer physician visits associated with more attention to psychosocial problems, lower prescribing rates, better quality prescribing, lower referral rates, lower return consultation rates, and patient satisfaction indicators reflecting "patient-centeredness" and "enablement." Longer visits may decrease malpractice litigation risk. ³

Attempts to measure actual visit length have yielded mixed results, but some suggest that United States (US) visits became longer up through the mid-1990s. Mechanic ⁴ calculated 1998 visit length at 21.5 minutes using American Medical Association (AMA) Socioeconomic Monitoring System (SMS) data and 18.3 minutes using National Ambulatory Medical Survey (NAMCS) data; with primary care visits for established patients at 17 minutes. ⁵ Gilchrist ⁶ replicating NAMCS methodology with 30 family physicians, found visits averaged 16.5 minutes (standard error (SE)=.66), but her nurses clocked averages of 12.8 minutes (SE=.52)--a 29% overestimation. United Kingdom (UK) studies find considerably shorter visits, typically 10 minutes. While not reporting visit length, a recent German survey suggested that lack of control over time helped motivate the 2006 physician general strike. ⁷

The Physician Worklife Study (PWS) a nationally representative survey of US physicians found "control over time" was a key hallmark of an "ideal job." Using physician self-reports of typical scheduled visit times and physician estimates of time needed, these investigators found high levels of time pressure. ⁸ Further, female physicians on average reported being allotted 33 minutes for complete physical examinations compared with 37 minutes for male physicians; but women physicians reported needing 41 minutes compared with 43 minutes for men ⁹ (p<.01). For follow-up visits women reported needing 24% more time, while men reported needing only 9% more time (p<.01). Other US surveys report female physicians being less satisfied with time they spend with patients. ¹⁰

It is likely that gender and career stage affect how physicians experience and evaluate their time in busy patient care environments. Male physicians may have authority within their practice settings, giving them more control over time than their female physician colleagues at the same career stage. ^{11, 12} Further, as physicians age, they acquire more extensive clinical experience and may develop time management skills and greater control over their lives and work.

This study aims to answer three questions: (1) How does national health system affect amounts of time allocated and required?; (2) How does national health system affect the extent of time pressures that physicians' experience in context of their everyday clinical work?; and (3) is there consistent variation by gender and career stage?

Methods

Data used here come from parallel surveys conducted in three countries (health care systems) by New England Research Institutes (NERI) as part of a study designed to look at

clinical decision making for older patients. Eligible physicians were: (a) primary care (family practice, general practice, or internal medicine) (US), general practitioners (UK), or internists or general practitioners (Germany), (b) trained at accredited medical schools in their own country (excluding international medical graduates); and (c) currently in clinical practice at least half-time. Physicians were stratified into four equal cells by gender and level of experience, with "less" experience defined as 12 years since graduation from medical school in the US or UK, or 7 years since licensure in Germany, or "more" experience as having 22 years since graduation from medical school in the US or UK, or

17 years since licensure in Germany. Hence a total of 384 physicians were surveyed, 12 strata by physician characteristics (gender, years of clinical experience) and country were defined. Screening telephone calls were conducted to identify eligible subjects and schedule appointments for hour-long, one-on-one, structured interviews in 2001-2 (128 in Massachusetts, 64 in the Midlands and 64 in Surrey and southeast London, England) and in 2004-5 (128 in the Northern Rhine / Westfalia region of Germany). Physician subjects received modest stipends partially offsetting lost revenue [\$100 (US), £50 (UK), 100 euros (Germany)]. All protocols were approved by NERI's Institutional Review Board and ethics boards in UK and Germany. Written informed consent was obtained from each physician before the start of the interview.

Physician gender and career stage were available from secondary sources at the time of recruitment and verified at screening. Despite differences in timing of medical education in the three different countries, age distributions were quite similar in the UK and US, both for *less experienced*. (UK: mean=34.3 years, median= 34.1 years; US; mean=35.1, median=36.2 years; Germany; mean=42.3 years; median=41.5) and *more experienced* groups (UK: mean=51.8 years, median= 54.6 years; US mean=52.5 years US median=55.1 years; Germany; mean=56.9 years; median=56.0 years), but German physicians were significantly older.

Three types of measures of use of time were applied adapted from Linzer 8:

- O *Typical visit length:* number of minutes allocated to physicians by the practice organization for that physician to engage in three types of visits: (1) new patient visit; (2) routine follow-up visit including prescription renewals; and (3) complete physical exam.
- *Time needed:* number of minutes that physicians believe is needed *to "provide high quality care to their patients"* for each of three types of visits.
- *Time stress*: minutes desired (*time needed*) minus minutes allocated (*typical visit length*); for each of three types of visits.

Physicians' perception of control over time was measured at two levels:

- *Time control--micro level*: physicians' assessment of how much control they have over the decision to spend sufficient time with patients.
- O *Time control--intermediate level*: physicians' assessment of how much control they have over the *hours they are required to be in the office/surgery*.

We used tabular and graphic presentations as well as analysis of variance (with Tukey's multiple comparisons) to examine the differences between physicians' typical visit length, time needed and time stress across the three countries, physician gender, and level of experience. For control over time we used a chi-square and/or Fisher's exact test to determine differences by country. We examined patterns of difference by country, gender, and experience to ascertain if any consistent gender and/or experience effects could be detected.

Findings

In general there is marked difference between the three countries in how time is used, as well as the norms and expectations governing the use of time (Figure 1 and Table 1). Thus among our sample respondents, in order to "provide quality patient care" during new patient appointments physicians in Germany reported being allocated more than 16 minutes for an initial visit, but would have preferred to have almost 21 minutes in order to get acquainted with patients. The situation for physicians in the UK was somewhat different. British physicians were allocated only slightly less than 11 minutes for initial visits, but reported that they needed almost 16 minutes for an initial visit. In contrast US physicians reported being allocated slightly more than a half-hour for first visits, yet they also claimed that they typically needed even more time. Statistical tests reveal highly significant differences across all countries for the amounts of time desired (p<.001) and allocated (p<.001), and statistically significant differences in these two quantities were detected between each pair of countries and (p<.05).

Physicians were also asked how much time they were allocated and how much time they needed for routine follow-up visits (Figure 2 and Table 1). Physicians in Germany report being allocated slightly less than 6 minutes for such an encounter, but claimed to need almost 7 minutes for a routine follow-up visit. Physicians in the UK reported being allocated slightly less than 10 minutes for providing this service, but reported actually needing almost 13 minutes. Finally, US physicians reported having slightly more than 18 minutes allocated for this kind of visit, but actually needing more than 20 minutes to provide this service. Statistical tests found that the differences in minutes allocated and minutes needed were significantly different across the three countries (p<.001) and between each pair of countries (p<.05).

Our physician subjects were also asked how much time they were allocated for a complete physical exam (Figure 3 and Table 1). In Germany, physicians report being allocated about 13 minutes for a complete physical exam, but needing almost 15 minutes to perform this service. Physicians in the UK reported being allocated slightly less than 20 minutes for providing this service, but actually needing more than 25 minutes for doing a complete physical. US physicians said they had only about 36 minutes allocated for complete physicals, but needed almost 41 minutes to do this work. Statistical tests found that the differences in minutes allocated and minutes needed were significantly different across the three countries (p<.001) and between each pair of countries (p<.05).

When the number of minutes a physician thought they needed was subtracted from the number they reported being allocated, the resulting quantity was taken to be a measure of time stress, i.e., additional minutes needed to provide high quality care (Figure 4 and Table 1). German physicians would prefer to have almost 5 minutes of additional time for new visits, less than 2 minutes of additional time for return visits, and less than 3 minutes for complete physical exams. On the other hand, British physicians needed more additional time for an initial visit, for routine follow-up visits, and for complete physicals. Finally, American physicians needed an additional 5.5 minutes for new visits, but typically would like to have about 3 more minutes for follow-up visits, and an additional 5 minutes for a complete physical.

In terms of control over working hours, US and German physicians have similar perceptions of autonomy with well over half of them claiming to "always" or "usually" have control over their work schedules and the amount of time they spend with patients (Table 2) (p=0.2). On the other hand over half of the British physicians reported that they "never" or only "sometimes" had control over their work schedules or the amount of time they spent with

patients. No statistically significant differences on these two items were detected between the German and American samples, but in both cases UK physicians reported having less control over their time than did physicians in the other two countries (p<0.05).

Although a few statistically significant gender and cohort differences were detected, the magnitude, direction, and strength of associations between gender and cohort and various time related dependent variables were neither consistent nor readily interpretable.

Interpretation

In summary, German physicians expect to have less time scheduled for and actually use less time for return visits and complete physicals than do their British counterparts. British physicians are scheduled more tightly and appear to work more rapidly than their American colleagues. No statistically significant differences in amounts of additional time needed for new visits were detected when the three countries were compared, but there were differences between Germany and the US and Germany and the UK in the amount of extra time needed for follow-up visits and for complete physical exams (p<.05). However, there were no differences between the two English speaking countries in terms of latter two time stress measures. Analyses of the same data set showed that German physicians would like to see the patient again sooner. Thus, physicians in Germany have the smallest time allocation for a single visit while they would see the patient in smaller intervals.

As an experiment, this study necessarily required purposive sampling to fill 12 distinct physician strata and not the use of nationally representative samples. Although we know that all physicians in the samples worked at least half-time, we lack actual or self-reported data on hours worked per week or actual schedules. Hence, it is difficult to assess how much perceptions about control over time might be due to variations in scheduled work hours rather than the extent of flexibility in adhering to full-time work schedules or variations in pressing time demands associated with patient care, administrative responsibilities, or other life obligations. Observed differences between the three national health care systems may arise from differences in employment practices, career pathways, cultural expectations, or societal supports available to professional workers in the three societies studied, rather than from distinctive features of the health care delivery systems of the countries in which these physicians work.

Some differences between nations may be due to the differences in the kinds of organizations in which the sample physicians are working, especially given the Massachusetts-based sample of US physicians. ¹³ The more experienced physicians in the US may be in more secure practice settings in which there are fewer intermediary structures or where, because of their status within their practice organizations, they have relatively high autonomy or they can shift more stressful tasks to less experienced colleagues. In fact, 56% of this group (older males in the US) worked in fee-for-service practice settings. Further, in the UK sample only a minority of older male physicians, 28%, were involved in Personal Medical Services contracts with the NHS. Less information is available for the German sample about type of organizational settings in which they are employed, although 40% were solo practitioners with the rest in group practice.

Finally, the purposive way in which physicians were recruited limits generalizability, and raises the possibility of selection bias. However, such bias likely underestimates physicians' time stress consistent with evidence that physicians with more "time pressure" are less likely to participate in studies. ^{8, 14}

Conclusion

Two broad conclusions can be drawn from this study. First, when compared to physicians in the other two nations, US physicians reported greater amounts of time scheduled with patients for all three types of visits than do their counterparts in either the UK or Germany, but are tied with their German colleagues in their perceptions of control over their work schedules and the amount of time they spend with patients. In contrast UK physicians experienced less control on these dimensions. In those cases where UK and German physicians' desire for a few more minutes with patients is more modest in absolute terms than is the case with US physicians, their desire for more time may be relatively more significant given the meager amounts of time they have scheduled compared to their American counterparts. In particular, the brief amounts of time that German physicians have available for and use with their patients in return visits may be balanced somewhat by the tendency for German physicians to provide a greater number return visits for their patients than is the case in the US or the UK. ¹⁵

Secondly, although gender and career stage may matter, there are no consistent effects across nations. While it is likely, for example, that younger female physicians may have markedly different experiences from their older male counterparts in the same or different countries, no uniform gradients by age and/or gender were found. Larger longitudinal studies with the same individuals or repeated observations on similar cohorts should be developed to answer many questions more definitively and to surface the underlying dynamics responsible for how physicians' gender and career stage affects how they cope with time constraints in different nations.

Acknowledgments

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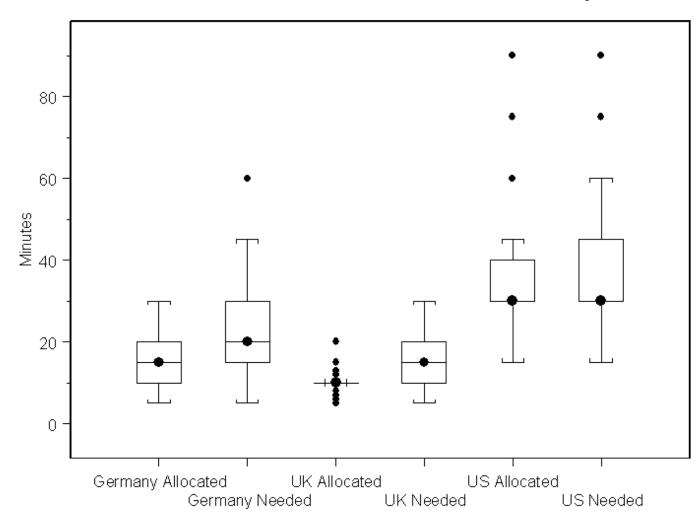


Figure 1.Time in minutes allocated and time needed for a new patient visit, by country

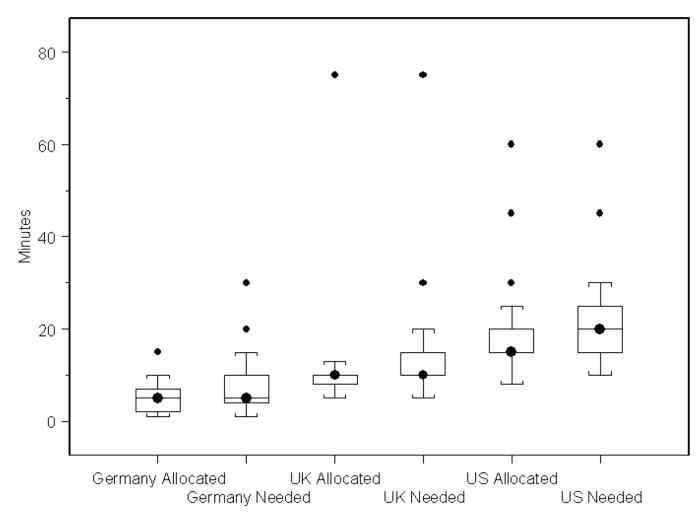


Figure 2.Time in minutes allocated and time needed for a routine patient visit, by country

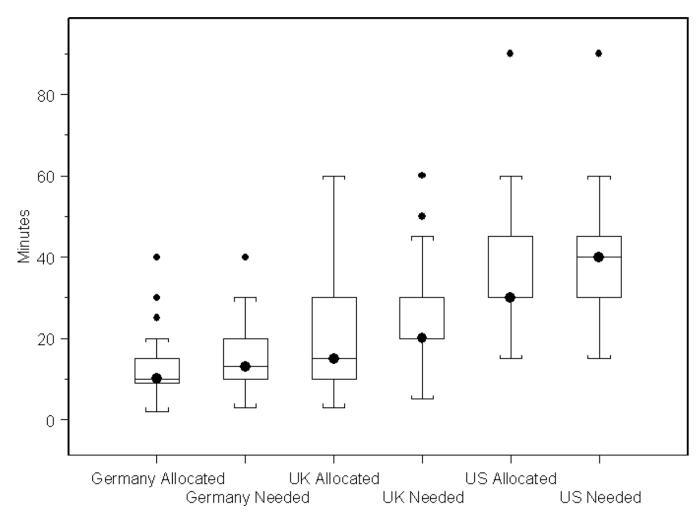


Figure 3. Time in minutes allocated and time needed for a complete physical, by country

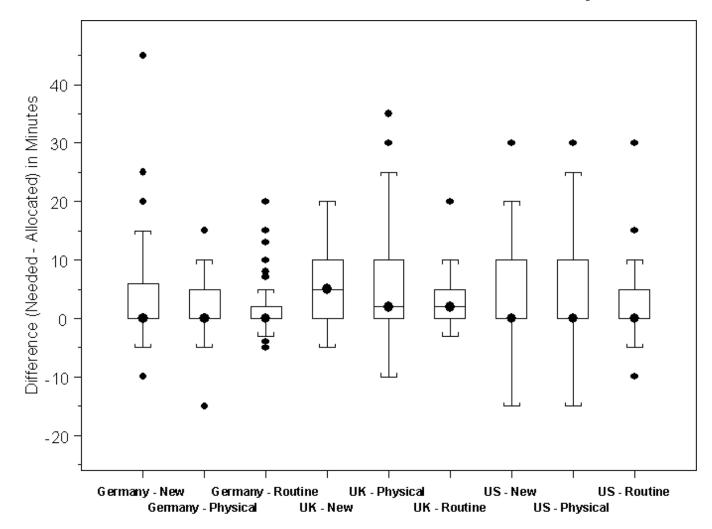


Figure 4.Time stress (time needed minus time allocated) in minutes for three types of patient visits by country

These figures are box plots. A box is drawn between the first and third quartile, with a line and large dot at the median. Whiskers are drawn outwards from the quartiles to a data point which is within 1.5 times the inter-quartile range from the quartile. Other data points are considered outliers and are represented by a small dot.

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Table 1

Time (in minutes) allocated, needed, and time stress (needed-allocated) for new patient visit, routine visit including prescription renewal, and complete physical exam by country, n=128 in each country

Type of Visit	Country	Allocated, Needed, or Time Stress	Mean	Median	Standard Deviation
New patient					
	Germany	Allocated	16.3	15.0	6.3
		Needed	20.8	20.0	8.8
		Time Stress	4.5	0.0	7.5
	UK	Allocated	10.7	10.0	3.6
		Needed	15.7	15.0	5.3
		Time Stress	5.0	5.0	5.2
	$\mathbf{S}\mathbf{O}$	Allocated	32.4	30.0	13.4
		Needed	37.9	30.0	14.0
		Time Stress	5.5	0.0	8.6
Routine visit					
	Germany	Allocated	5.5	5.0	3.7
		Needed	6.7	5.0	4.7
		Time Stress	1.2	0.0	3.3
	UK	Allocated	6.7	10.0	6.1
		Needed	12.6	10.0	7.1
		Time Stress	3.0	2.0	3.9
	Ω S	Allocated	18.1	15.0	7.4
		Needed	20.6	20.0	9.1
		Time Stress	2.5	0.0	5.5
Complete physical exam					
	Germany	Allocated	12.5	10.0	7.0
		Needed	14.8	13.0	7.7
		Time Stress	2.2	0.0	4.3
	UK	Allocated	19.8	15.0	12.2
		Needed	25.4	20.0	11.1
		Time Stress	5.3	2.0	7.2

Type of Visit	Country	Allocated, Needed, or Time Stress		Mean Median	Standard Deviation
	Sn	Allocated	36.0	30.0	13.8
		Needed	41.0	40.0	13.6
		Time Stress	5.0	0.0	8.8

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Table 2

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Control over	Country	Always	Usually	Country Always Usually Sometimes Never	Never
The hours they are required to be in their office					
	Germany	18	41	30	11
	UK	8	46	43	∞
	Ω S	23	31	38	∞
Spending sufficient time with patients					
	Germany	21	52	23	8
	UK	3	39	44	14
	SO	13	54	30	3

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