

Special Article: Distinguished Paper From the 2000 North American Primary Care Research Group Meeting

Continuity of Care and Trust in One's Physician: Evidence From Primary Care in the United States and the United Kingdom

Arch G. Mainous III, PhD; Richard Baker, MD, FRCGP; Margaret M. Love, PhD; Denis Pereira Gray, OBE, FRCGP; James M. Gill, MD, MPH

Background and Objectives: *Patients' trust in their physician to act in their best interest contributes to the effectiveness of medical care and may be related to the structure of the health care system. This study explored the relationship between continuity of care and trust in one's physician, particularly in terms of differences between the United States and the United Kingdom (UK).* **Methods:** *We conducted a cross-sectional survey of adult patients (n=418 in the United States and n=650 in the UK) who presented in outpatient primary care settings in the United States (Charleston, SC, and Lexington, Ky) and in the UK (Leicester and Exeter).* **Results:** *A high percentage of both groups of patients reported having a usual place of care and doctor. A total of 69.8% of UK patients and 8.0% of US patients have had their regular physician for ≥ 6 years. US patients (92.4%) are more likely than UK patients (70.8%) to value continuity with a doctor. Both groups had high levels of trust in their regular doctor. Trust was related to one continuity measure (length of time for the relationship) but not to another (usual provider continuity index more than 1 year). In a multivariate model, country of residence had no independent relationship with trust, but continuity of care was significantly related.* **Conclusions:** *Higher continuity is associated with a higher level of trust between a patient and a physician. Efforts to improve the relationship between patients and physicians may improve the quality and outcomes of care.*

(Fam Med 2001;33(1):22-7.)

The concept of having a long-term relationship between a patient and a physician is a hallmark of primary care and has long been thought to have a beneficial effect on health care utilization and outcomes.¹ Patients rank continuity of care with a physician as a high priority.² High patient-physician continuity is associated with a decreased likelihood of future hospitalization, as well as decreased emergency department use.³⁻⁵ In fact, research indicates that continuity with an individual physician provides health benefits that receiving care at the same site but seeing different providers does not

provide.⁴ Moreover, discontinuity in the delivery of care has been suggested to play a role in medical errors and patient safety.⁶

A common explanation given for the relationship between continuity of care and health outcomes is that continuity with a physician leads to increased knowledge and trust between a patient and a physician. This increased knowledge and trust may make it easier for the physician to manage medical problems in the office or over the phone, thereby avoiding hospitalization or emergency department visits. There is, in fact, some evidence that higher continuity of care is related to greater trust in one's physician.⁷

The trust that patients have in their physician to act in their best interest may also contribute to the effectiveness of medical care. In an investigation of the effect of a publicized error in cervical cancer screening in the United Kingdom (UK), the study found that most women who reported that they trusted in the cancer

From the Department of Family Medicine, Medical University of South Carolina (Dr Mainous); Department of General Practice and Primary Health Care, University of Leicester, Leicester, UK (Dr Baker); Department of Family Practice, University of Kentucky (Dr Love); Institute of General Practice, University of Exeter, Exeter, UK (Professor Sir Pereira Gray); and Department of Family and Community Medicine, Christiana Care Health System, Wilmington, Del (Dr Gill).

screening program kept their appointments, while those who reported less confidence did not.⁸ It has been suggested that the structure of the health care plan plays a role in increasing or decreasing patient trust.⁹

Historically, Americans have had the ability to choose their own physician. In the UK, however, the ability to choose a personal physician has been more limited.^{10,11} Cross-national comparisons between the United States and the UK regarding continuity of care and trust are useful in understanding the relationship between these factors. In the UK, the patient registers with a general practitioner (GP). Registration is a form of a contract, which means the GPs are paid for having the patient registered with them. The patient can choose with whom to register, but, in practice, the degree of choice is often limited. Thus, within a practice of six doctors, four may have as many patients as they can handle, and only two doctors will be taking on new patients. Also, there is no real competition among GPs for patients, and, therefore, changing among GPs is rare. The assignment of patients to individual physicians in the UK does not mean that continuity is high. In fact, although patients are registered with a named GP, the way it works in most practices is that the patient mostly sees the GP in the practice who is available.¹² However, some GPs arrange their practices according to “personal lists,” a system that attempts to steer patients to the physician to whom they are assigned.^{13,14}

In summary, patients in the UK have a limited ability to easily choose and switch doctors, and demand for primary care exceeds supply. In the United States, on the other hand, the patient has a better ability to choose and change doctors, and there is competition for patients. Patients unable to choose their physician may be less satisfied with their care and perceive quality of care to be lower.^{11,12} This research explored differences between the United States and the UK in the relationship between continuity of care and trust in one’s physician.

Methods

Design

Adult patients (age ≥ 18) were approached for participation as they arrived for an office visit in several ambulatory practices. The participating practices were a family practice residency and a faculty practice 17 miles apart in Charleston, SC, a family practice residency and a faculty practice in Lexington, Ky, three general practices (one solo, two group) in Leicester, UK, and a general practice center in Exeter, UK. Participating patients were given a two-part survey with questions to be completed prior to their visit and several other questions to be completed after their visit. The questionnaire responses were anonymous. The institutional review board at each site approved the study.

Survey Instrument

The survey included questions on a variety of variables, including source of care, continuity of care, importance of continuity, and trust in physician. Additional questions pertained to the demographic characteristics of the subjects.

Source of Care. The patients were asked whether they had a usual source of care prior to the diagnosis for which they were seeing the physician on the day of the survey. This is a common way of operationalizing access to care in patient self-report surveys.¹⁵ The questions included, “Is there one particular place that you go if you are sick or need advice about your health?” and “Is there a regular doctor you usually see at this place?” Subsequent questions on continuity of care and trust in one’s physician were asked only of individuals who indicated that they had a regular source of care.

Continuity of Care. Continuity of care with a provider was operationalized in several ways that emphasized related but differing constructs. One question asked if the doctor the patients were seeing today was the doctor they usually see.

A second measure of continuity was based on the concentration of care with a single provider, calculated as a ratio of visits to the usual provider divided by the total number of visits to all providers in a defined period of time.¹ The proportion of encounters to the regular doctor represented an indicator of continuity of care. This proportion has been termed the usual provider continuity (UPC).¹ The respondents in our study were asked to report all the encounters they had with the health care system in the past year (ambulatory visits, emergency department visits, hospital outpatient, hospital admissions, home visits) and how many were to their regular doctor, and we calculated the UPC.

A third construct of continuity of care was the longitudinality of the relationship with the regular provider. The respondents were asked to assess the length of time of the relationship with the regular provider (ie, “How long had you been seeing this doctor?”).

Importance of Continuity of Care. Patients were asked how important it was to them that they see the same doctor every time they have a health problem. The variable was scored on a 5-point Likert scale (1=not important at all, 5=very important).

Trust in Physician. Trust in the primary provider was measured by the Trust in Physician Scale.¹⁶ This scale consists of 11 Likert-type items. It has demonstrated reliability and validity and is distinct from patient satisfaction with the physician.⁷ The scale has been used in other studies as an indicator of patient-physician trust.¹⁷ The dimensions of trust included in the scale

have been replicated as important dimensions in a qualitative study focusing on patient-physician trust.¹⁸ The scale is scored from 11 to 55; a higher score indicates greater trust in the regular doctor. Only individuals who completed all of the items in the trust scale had a score computed.

Demographics. The demographic characteristics of the study participants are shown in Table 1. Income in the UK was transformed from pounds to dollars using the current exchange rate (April 2000) to allow for comparison between the countries. Similarly, education was collapsed in both groups to provide for equivalent categories.

Analysis

Univariate descriptive statistics were initially computed. Continuity of care measures—trust in one's physician and importance of continuity—were compared between the UK and US samples in bivariate analyses (chi-square, Wilcoxon rank sum, and *t* tests). Pearson's

correlations were computed between the Trust in Physician Scale and UPC and importance of seeing one's regular doctor. Since length of time seeing one's regular doctor was assessed in collapsed categories, a Spearman's correlation was computed between this measure of continuity and trust in one's physician. The correlation matrices with the different continuity measures were examined for evidence of multicollinearity. These analyses were computed for the United States and UK separately.

Following an examination of unadjusted univariate relationships comparing the two countries, a linear regression, with trust in one's physician as the dependent variable, was computed with continuity of care and country of residence, while adjusting for other factors that might influence the patient-physician relationship. Since trust in one's physician was limited to individuals who indicated that they had a regular doctor, the regression was computed only for those who indicated that they had a regular doctor. The variables that were entered included UPC, length of time with regular doctor, importance of continuity, UK/US residence, age, gender, race, education, income, presence of a chronic disease, and number of office visits in the past 12 months. Because of the differences in educational systems and creation of equivalents, education was dichotomized as more than high school (1) and high school or less (0). Race was classified as white (1) or nonwhite (0). Country of residence was classified as United States (1) and UK (0).

Results

The demographics of the UK and US samples are shown in Table 1. There were several important differences between the samples. The individuals in the UK sample were older, more likely to be white, had less education, and had significantly more outpatient utilization in the past 12 months.

The correlation between continuity of care measures and the Trust in Physician Scale are shown in Table 2. The United States and the UK both yielded significant relationships between trust in one's physician and continuity of care, yet neither group demonstrated a significant relationship between trust and the UPC. The importance of seeing one's regular physician was significantly related to trust in one's physician in both samples.

Table 1

Demographic Characteristics of the Study Participants

	United States (n=418)	United Kingdom (n=650)	P Value
Gender (%)			.93
Male	34.1	33.8	
Female	66.0	66.2	
Age (years)			<.0001
Mean (SD)	42.1 (13.9)	49.3 (16.4)	
Income (%)			.62
\$9,999 or less	9.5	10.9	
\$10,000–\$39,999	62.0	58.5	
\$40,000 or more	28.5	30.5	
Education (%)			<.0001
Less than high school*	14.9	50.6	
Completed high school*	43.7	18.2	
Some college*	18.0	12.5	
Completed college*	13.8	9.2	
Beyond college*	9.6	9.4	
Race (%)			<.0001
Black	46.3	0	
White (not Hispanic)	50.4	99.5	
Hispanic	1.1	0	
Asian, Pacific Islander, or Asian British	2.2	.5	
Have a chronic disease (% yes)	35.9	36.7	.35
# of office visits in the past year			<.0001
Mean (SD)	3.7 (4.2)	6.6 (6.1)	

* or equivalent

SD—standard deviation

Table 2

Correlation Between Trust in One's Physician and Continuity of Care

	UNITED STATES		UNITED KINGDOM	
	r	P Value	r	P Value
UPC	.09	.17	.05	.32
Length of time with regular physician	.27	<.001	.24	<.001
Importance of seeing regular physician	.18	.002	.24	<.001

UPC—usual provider continuity

Table 3 shows the comparisons between the two countries in continuity of care and trust in one's physician. UK patients were more likely than the US patients to report having a usual site of care and a regular physician. Nonetheless, the US patients had a higher UPC than UK patients, though the UK patients had

longer relationships with their regular doctor. There was no significant difference in trust between the two groups; both groups had high levels (>44 points on the scale that ranges from 11 to 55). There was no evidence of multicollinearity between the continuity measures; no correlation was greater than $r=.50$.

The length of time with one's regular physician and the importance of seeing one's regular physician each time were the strongest predictors of trust. The greater the continuity, the higher the trust. Additionally, the older the patient, the greater the trust. However, the results of the multivariate analysis indicated that country of residence was not significantly related to trusting one's physician after adjusting for other relevant variables (Table 4).

Discussion

The results of this study indicate the relationship between continuity of care with a provider and trust in the provider. The greater the continuity between the patient and provider, the higher the patient's trust in the provider. This relationship was present in both the United States and the UK. After controlling for demographics and continuity of care, residence in the UK or United States was not a significant predictor of trust in

Table 3

Continuity of Care and Trust in One's Physician, by Country

	United States (n=418)	United Kingdom (n=650)	P Value
Is there one particular place that you usually go if you are sick or need advice about your health? (% yes)	88.2	98.1	<.0001
Is there a regular doctor you usually see at this place? (% yes)	79.0	86.8	<.0001
Among those with a regular doctor			
Is the doctor you are seeing today your regular doctor? (% yes)	64.2	81.4	<.0001
How important is it to you to see the same doctor every time you have a health problem? (% responding "important" or "very important")	92.4	70.8	<.0001
Length of time with regular doctor (%)			<.0001
<1 year	23.3	7.9	
1-2 years	45.0	7.0	
3-5 years	23.6	15.4	
6-10 years	4.0	25.4	
>10 years	4.0	44.4	
UPC			.001
Mean (SD)	.79 (.29)	.72 (.26)	
Trust Scale			.23
Mean (SD)	45.1 (5.9)	45.7 (6.1)	

UPC—usual provider continuity
SD—standard deviation

one's physician. This study points to the importance of the patient-physician relationship and trust in one's physician as factors in delivering care across countries and health care systems.

The patient-physician relationship is an important part of delivering quality care and is built on a foundation of trust.¹⁹ A lack of trust by patients may lead to conflicts between the patient and the physician about the cause of the patient's medical problem or appropriate methods of treatment. Such conflict may, in turn, lead to a lack of patient adherence to medications and frustration by physicians in their ability to communicate effectively with patients.²⁰ Promoting mechanisms to increase trust between patients and physicians is a strategy that should be implemented in all health systems. Our study results suggest that one way to increase trust may be to increase continuity of care between patients and their personal physician.

Many previous studies have examined the impact of continuity on health care quality and outcomes. However, the results of these studies have not been consistent.²¹ One reason for this inconsistency could be that continuity is often conceptualized and measured in different ways. In some studies, continuity is defined as having a regular physician or place of care,¹⁵ a long-term relationship with a physician or place,²¹ or concentration of one's care with that physician or place.^{3-5,22} Still other studies define continuity according to patient perceptions and priorities.²³ In our study, however, continuity was defined in each of these ways. What is particularly striking about the results is that the length of time that the patient has had a relationship with the doctor was significantly and independently associated with trust, yet the short-term UPC measure was not. This suggests that the various continuity measures capture different constructs, and the establishment of a relationship between a patient and a provider seems to require time to develop.

The difference between the UK patients and the US patients in trust was attenuated in a multivariate model. The results indicated that continuity of care and a desire for continuity were significant predictors of trust. This finding has been reported previously.⁷ Increased choice in physicians has also been shown in a single-country analysis to be related to trust,¹⁹ but the lack of a difference between the countries in our studies implies that patient choice of physician may not be as important a factor in trust as has been assumed.

It is unclear whether trust in one's physician leads to a continued relationship with that provider or whether seeing the same individual over time contributes to the patient-physician relationship, thereby increasing trust. Research has indicated that for some patients, rapid access to a physician for an acute illness is more important than delaying care to see their regular physician.²⁴ It is worth noting that length of time in the patient-physician relationship is significantly and independently

Table 4

Multiple Regression With Continuity, Country of Residence, and Demographic Variables on Trust in Physician*

Variable	Standardized Regression Coefficient	P Value
UPC	.034	.46
Length of time with regular physician	.321	<.0001
Importance of seeing regular physician	.199	.0001
US residence	.112	.12
Age	.169	.001
Gender	.020	.65
Race	-.010	.85
Education	.034	.54
Income	.073	.12
Chronic disease	.059	.21
Number of outpatient visits in past 12 months	.051	.29

* $R^2=.183$

UPC—usual provider continuity

associated with trust, which seems to be evidence that the probability is that continuity fosters trust. Future research focusing on determinants of commitment to a physician and how trust develops may be particularly enlightening.

Limitations

There are several limitations to the generalizability of the results of this study. First, one of the continuity of care measures is based on self-reports of health care utilization. This index of continuity may be subject to recall bias. However, we used several indicators of continuity of care in an attempt to overcome the limitations inherent in each of the continuity of care measures. Second, the samples of patients surveyed in the study were not random or population-based samples of the US or UK adult population. By collecting data in several locations in the United States and several locations in the UK, our study populations do provide a general picture of patients seen in family practice and general practice settings, but the populations under study may be skewed toward individuals with chronic illness (Table 1). However, there was no significant difference in chronic illness between the UK and the US samples.

Conclusions

This study shows that higher continuity is associated with a higher level of trust between patient and physician. This finding has significant implications for health care delivery today. There is widespread agreement that trust between patient and physician is important for high-quality health care. Recent studies have suggested that trust in physicians has deteriorated over recent decades.²⁵ One reason for this deterioration could be decreasing continuity. Our study suggests that one way to improve trust is to improve continuity. This could be encouraged through financial incentives, eg, by providing higher reimbursement to physicians or lower copayments to patients when a visit is made to one's regular physician or by allowing patients to keep their regular physician when they change health plans. Moreover, in the UK, it might be worth continued exploration of the use of personal lists. Such efforts to improve continuity can improve the relationship between a patient and his/her physician and may improve the quality and outcomes of care.

Acknowledgment: This paper was supported in part by a grant from the Burroughs Wellcome Fund.

Corresponding Author: Address correspondence to Dr Mainous, Medical University of South Carolina, Department of Family Medicine, PO Box 250192, 295 Calhoun Street, Charleston, SC 29425. 843-792-6986. Fax: 843-792-3598. Mainouag@musc.edu.

REFERENCES

1. Starfield B. Primary care: concept, evaluation, and policy. New York: Oxford University Press, Inc, 1992.
2. Fletcher R, O'Malley M, Earp J. Patients' priorities for medical care. *Med Care* 1983;21:234-42.
3. Gill JM, Mainous AG III. The role of provider continuity in preventing hospitalizations. *Arch Fam Med* 1998;7:352-7.
4. Mainous AG III, Gill JM. The importance of continuity of care in the likelihood of future hospitalization: is site of care equivalent to a predominant clinician? *Am J Public Health* 1998;88:1539-41.
5. Gill JM, Mainous AG III, Nsereko M. The impact of continuity of care on emergency department utilization. *Arch Fam Med* 2000;9:333-8.
6. Cook RI, Render M, Woods DD. Gaps in the continuity of care and progress on patient safety. *BMJ* 2000;320:791-4.
7. Thom DH, Ribisl KM, Stewart AL, Luke DA. Further validation and reliability testing of the Trust in Physician Scale. The Stanford Trust Study Physicians. *Med Care* 1999;37:510-7.
8. Steadman L, Field S, Rutter DR. Attendance at cancer screening in the wake of widespread adverse publicity surrounding test results. *J Med Screen* 1999;6:40-41.
9. Mechanic D. The functions and limitations of trust in the provision of medical care. *J Health Polit Policy Law* 1998;23:687-95.
10. Baker R. Will the future of GP remain a personal doctor? *Br J Gen Pract* 1997;47:831-4.
11. Schmittiel J, Selby JV, Grumbach K, Quesenberry CP Jr. Choice of personal physician and patient satisfaction in a health maintenance organization. *JAMA* 1997;278:1596-9.
12. Freeman GK, Richards SC. How much personal care in four group practices? *BMJ* 1990;301:1028-30.
13. Gray DJP. The key to personal care. *J R Coll Gen Pract* 1979;29:666-78.
14. Roland M, Mayor V, Morris R. Factors associated with achieving continuity of care in general practice. *J R Coll Gen Pract* 1986;36:102-4.
15. O'Malley AS, Mandelblatt J, Gold K, Cagney KA, Kerner J. Continuity of care and the use of breast and cervical cancer screening services in a multiethnic community. *Arch Intern Med* 1997;157:1462-70.
16. Anderson LA, Dedrick RF. Development of the Trust in Physician Scale: a measure to assess interpersonal trust in patient-physician relationships. *Psychol Rep* 1990;67:1091-100.
17. Meit SS, Williams D, Mencken FC, Yasek V. Gowning: effects on patient satisfaction. *J Fam Pract* 1997;45:397-401.
18. Thom DH, Campbell B. Patient-physician trust: an exploratory study. *J Fam Pract* 1997;44:169-76.
19. Katz J. The silent world of doctor and patient. New York: Free Press, 1984.
20. Levinson W, Stiles WB, Inui TS, Engle R. Physician frustration in communicating with patients. *Med Care* 1993;31:285-95.
21. Weiss LJ, Blustein J. Faithful patients: the effect of long-term physician-patient relationships on the costs and use of health care by older Americans. *Am J Public Health* 1996;86:1742-7.
22. Christakis DA, Wright JA, Koepsell TD, Emerson S, Connell F. Is greater continuity of care associated with less emergency department utilization? *Pediatrics* 1999;103:738-42.
23. Kao AC, Green DC, Zaslavsky AM, Koplan JP, Cleary PD. The relationship between method of physician payment and patient trust. *JAMA* 1998;280:1708-14.
24. Love MM, Mainous AG III. Commitment to a regular physician: how long will patients wait to see their own physician for acute illness? *J Fam Pract* 1999;48:202-7.
25. Mechanic D. Changing medical organization and the erosion of trust. *Milbank Q* 1996;74:171-89.