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Usual Source of Care for adults with and without Back Pain: MEPS data pooled for years 2000–2006

Monica Smith, DC, PhD[Associate Professor]
Palmer College

Abstract

Objectives—The purpose of this study was to explore the extent to which individuals with back pain or other health conditions, and individuals with no health problems, report having a usual source of care (USC) for their health care needs.

Methods—This study evaluated longitudinal Medical Expenditures Panel Survey data (MEPS data pooled for survey calendar years 2000-through-2006). Comparisons were made between adult MEPS respondents identified as having a back pain condition (n=10,194) compared to those without back pain but with other health condition (n=45,541), and those with no back pain and no other condition (n=5,497).

Results—Compared to individuals with no health problems, those with back pain were almost 8 times more likely (OR=7.8, p<.001) to report having a USC; and those with other health problems besides back pain were 5 times more likely (OR=5.4, p<.001). For those with a USC, individuals with back pain, and those with other problems but not back pain, were both about one and a half times more likely than those without any health problems to report a specific provider type as their USC (p<.001).

Conclusion—Study findings suggest that relatively healthy adults without back pain are less likely to have a USC than those with back pain or other health problems.

Keywords

Back Pain; Spine; Chiropractic

INTRODUCTION

Per Congressional mandate, the US Agency for Healthcare Research and Quality (AHRQ) produces reports to the Nation about the quality of health care, and access to health care.¹ The AHRQ *National Healthcare Quality Report* and *National Healthcare Disparities Report* document national trends in the effectiveness of care, patient safety, timeliness of care, patient centeredness, and efficiency of care.

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CORRESPONDING AUTHOR CONTACT INFORMATION: Monica Smith, DC, PhD Monica@Smith.Name; Monica.smith@palmer.edu Postal mailing address: 3964 Rivermark Plz #344, Santa Clara, CA, 95054 Phone number: 415-439-9996 Fax number: 415-459-3195.

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The AHRQ *National Healthcare Disparities Report* measures trends in access to care among priority populations such as residents of rural areas, women, children, older adults, individuals with disabilities or special health care needs, and racial, ethnic, or income groups.^{2,3,4} Toward development of the current and future reports on healthcare disparities, policy and research working groups have vetted various data sources and methods for measuring access to care.² The AHRQ-sponsored Medical Expenditures Panel Survey (MEPS) data is a key source for data on access to care, and other sources include data from Centers for Disease Control and Prevention (CDC), Centers for Medicare and Medicaid Services (CMS), Indian Health Service (IHS), National Committee for Quality Assurance (NCQA), National Institutes of Health (NIH), and the US Census Bureau.³ As synthesized by the multiple AHRQ working groups, an individual's access to care may be measured along a number of dimensions, such as their ability to gain initial entry into the health care system (e.g. health insurance coverage, having a usual source of care (USC), or patient perceptions of need); their ability to get needed care within the system (e.g. wait times, or obtaining referrals); patient perceptions of their care (e.g. patient-provider communication and relationship, cultural competency, health information); and their pattern of utilizing various services (e.g. general and specialty care, ambulatory care, emergency and urgent care, or avoidable admissions to hospital and inpatient care).⁴

Access to care as a function of an individual's having a USC, has been described using data from the AHRQ-sponsored Medical Expenditures Panel Survey (MEPS)^{5,6,7,8,9}, National Health Interview Survey (NHIS)^{10,11}, National Health and Nutrition Examination Survey (NHANES)¹², Community Tracking Study (CTS),¹³ regional or local area surveys,¹⁴ or targeted surveys (e.g. using a consumer mailing list of the National Multiple Sclerosis Society)¹⁵

This study analyzes data from the Medical Expenditures Panel Survey (MEPS) to explore the extent to which individuals with back pain or other health conditions, and individuals with no health problems, report having a USC for their health care needs.

METHODS

Adult MEPS respondents (N=61,323) were identified in the 2-year longitudinal MEPS Panels 5-through-10 (MEPS survey calendar years 2000-through-2006) as reported in a previously published study.¹⁶ MEPS respondents with back pain were defined based on two condition coding classification schemes that are available in the MEPS medical conditions datafile,¹⁷ the Clinical Classification Category (CCC)¹⁸ codes and the International Classification of Diseases (ICD) codes (encompassing 66 ICD codes of acute, chronic, or recurrent episodic back pain conditions, such as spondylosis and intervertebral disc disorders, sacroiliac sprain/strain, other back sprain/strain). Each of the 61,323 adult MEPS respondents were assigned to one of three "condition groups" for this study: (a) Individuals identified as having a back pain condition (n= 10,194); (b) Individuals who did not report back pain, but did report having some other health condition (n=45,541); and (c) Individuals who reported no health condition (no back pain and no other condition) during the 2-year MEPS longitudinal panel survey (n=5,497).

MEPS participants are surveyed on whether they have a USC, and if so the type of health care provider, their satisfaction with the USC provider's care, and any problems with accessing the USC provider. During the MEPS field interviews, USC is defined for participants as "...a particular doctor's office, clinic, or other place that the individual usually goes to if they are sick or need advice about their health..."; followed by a set of MEPS interview questions about that USC provider: "Is provider a medical doctor?"; "Is

provider a nurse, nurse practitioner, physician's assistant, midwife, or some other kind of person?"; "What is provider's specialty?".

For this study, USC is operationalized using the three MEPS survey variables: "Does person have a USC"; If yes, "Does person have a specific USC provider type"; If yes, "What type of provider". Of the 51,842 MEPS respondents who reported having a USC, 56% (n=29,134) listed a specific USC provider type (see Figure1).

Two hypotheses were tested in this study (Figure1), comparing the three condition groups of: (a) Individuals with back pain; (b) Individuals without back pain but with some other health condition; and (c) Individuals with no condition. The null hypotheses were no significant differences between the three groups.

The first hypothesis test compared the three condition groups as to their reporting that they have a USC, operationalized as an affirmative response code for the MEPS variable "Does person have a USC".

The second hypothesis test examined only those respondents who did report having a USC, and compared the 3 groups as to whether they report a specific "Provider Type" as their USC.

The two hypotheses were tested using Bivariate Chi-square tests and Binomial Logistic regression modeling. MEPS employs a complex sample design and oversamples certain population groups of interest, therefore longitudinal sampling weights and longitudinal adjusted variance estimators (strata, PSU) were applied during the inferential hypothesis testing to account for the MEPS sampling frame and complex survey design features. All data management and statistical analyses (unweighted and weighted, descriptive and inferential) were performed using SPSS for Windows versions 17.0 and 12.0 (SPSS Inc, Chicago, IL).

RESULTS

The three condition groups differed significantly on having a USC (Figure1). Compared to individuals with no health problems, those with back pain were almost 8 times more likely (OR=7.8, $p<.001$) to report having a USC; and those with other health problems besides back pain were 5 times more likely (OR=5.4, $p<.001$). Comparing only the two groups with health problems, those with back pain were significantly more likely to have a USC than those with other health problems but not back pain (OR=1.5, $p<.001$).

For those who reported having a USC (n=51,842), individuals with back pain, and those with other problems but not back pain, were both about one and a half times more likely than those without any health problems to report a specific provider type as their USC ($p<.001$).

The specific categories and categorical assignment of provider types has evolved over successive administrations of the MEPS survey (see Appendix 1), necessitating a panel-by-panel approach to describing the specific provider types that are identified by MEPS respondents as their USC. The USC provider types from MEPS Panels 10, 9, and 8, are presented in Table 1, for each of the three condition groups.

DISCUSSION

These findings suggest that relatively healthy adults, i.e. those who report no active health problems during the course of the MEPS 2-year longitudinal data collection timeframe, are

also less likely to have a USC. This is consistent with other studies that have found that many adults may not have a USC simply because they choose not to, most probably because they do not perceive the need since they are relatively healthy.^{19,5,20} Interestingly, some individuals with no USC or who use the Emergency Department (ED) as their usual source when care is needed, may have lower overall costs than those who use MD generalists or MD specialists as their USC.⁹

The finding that back pain sufferers are significantly, and substantially, more likely to have a USC is also understandable, given that the nature of back pain may characteristically be a recurrent, episodic, or longterm chronic condition,¹⁶ for which individuals may use the services of spine care specialists on an ongoing basis. Paradoxically, the recurrent, episodic nature of back pain may also partly explain the finding that chiropractors are identified as a USC for adult MEPS respondents without back pain, in that these may be persons who utilize ongoing care to manage a sporadic recurring back problem, although they may not have experienced an active flare-up episode of their back pain during their 2-year MEPS data collection window. Minden, et al, found that individuals with multiple sclerosis (MS) who had experienced a past recent flare-up (one or two relapses in the preceding year) were more likely to identify a neurologist as their usual source of MS care in the current year, as compared to MS sufferers with no recent relapses.¹⁵ Another possible explanation is that some individuals may be using chiropractors as their USC for conditions other than back pain, or for other reasons altogether such as general wellness care.

A broad representation of provider types may be identified as a USC for individuals with back pain (Table1). Everett et al found that utilization of physician assistants and nurse practitioners (PA/NPs) as a USC was associated with chiropractor visits, which they reasoned may reflect a greater willingness of PA/NPs to recommend non-drug or CAM therapies for their patients.¹⁴ As suggested by this study, USC varies for individuals with back pain (Table1), and may include the use of physician assistants, nurse practitioners, chiropractors, or a broad range of other provider types, as their USC.

Identification of optimal arrangements for USC to ensure that patients receive both specialized and primary care services as appropriate to their needs, may vary by patient preference and may also vary by geographic location. For instance, since the dispersion of neurologists is not uniform across the US, then the appropriateness (or patient preference) for a “primary care” vs “principal care” model may vary as a function of geographic access to specialized neurological services, for persons with neurological disorders.¹⁵ In a “primary care model” generalists provide all primary care including referral to specialist. Within a “principal care model” some primary care services may be provided by specialists, such as neurologists, who also serve as an individual's USC. Variants on the “principal care model” theme includes the provision of primary care services by multidisciplinary teams that may be co-located (or coordinated if dispersed across the community) with such teams taking a patient-centered and family-centered approach and emphasizing wellness, maximal functioning, and ongoing integrated care.¹⁵

The distribution of generalist MD provider types also varies by geography and by location in Medicare Primary Care Service Areas (PCSAs). The geographic distribution of generalist MDs trained in family practice and general practice (FPs/GPs) more closely mirrors the distribution of the general population, with FPs/GPs tending to be located in areas of lowest Medicare reimbursements per beneficiary; whereas generalist MDs trained as internists tend to cluster toward areas with highest Medicare reimbursements (urban and northeast).⁹ The geographic distribution and use of chiropractors varies,²² and the use of outpatient physical therapy (PT) services for musculoskeletal conditions may also vary as a function of

geographic access, with individuals in urban and northeast areas being more likely to use PT than those in other areas.²¹

Limitations and future studies

A serious limitation to using MEPS data, is that the structure and format of the MEPS only allows respondents to identify a single location or single provider type as their USC. This “single USC provider” logic of the MEPS would presume that all individuals surveyed by MEPS can, or should, fit neatly into a “primary care model” rather than a “principal care model” for their use of health services, despite the fact that a “principal care model” may actually be preferred by many individuals.¹⁵ It is quite possible, and perhaps likely, that MEPS respondents would identify more than one provider type as their USC if allowed to do so (i.e. reflecting a care-seeking behavior more along the lines of a “principal care” rather than “primary care” model).

A further limitation, or caution, to using MEPS data, is that certain provider types, such as chiropractors, may be systematically under-reported as USC in the MEPS. For instance, the MEPS survey queries have changed over time, therefore certain provider types cannot even be discerned in earlier iterations of MEPS data (chiropractors were not listed as a provider type for the USC queries prior to MEPS survey year 2002, see Appendix). Less apparent, though just as important, is that the MEPS methodology may inadvertently introduce recall bias as a function of the interviewer protocol prompts, again resulting in systematic under-reporting of certain provider types. MEPS constructs a composite variable for “Usual Source Provider Type” from the set of MEPS interview questions: “Is provider a medical doctor?”; “Is provider a nurse, nurse practitioner, physician's assistant, midwife, or some other kind of person?”; “What is provider's specialty?”. Provider types that are specifically prompted by MEPS interviewers (e.g. MDs, PAs, NPs) may be recalled more readily by MEPS survey participants as their USC, more so than other provider types that are not specifically elicited by the MEPS interviewer protocol (e.g. doctors of chiropractic, osteopaths are not specifically prompted as a response to the USC queries).

Much more research is needed to better understand the outcomes and costs associated with various USC utilization behaviors, including the possibility that shorter-term savings may be more than offset by longer-term costs and consequences associated with individual choices for their usual sources of care. Further research needs also to be directed toward better clarifying how individuals do, or should, use the Emergency Department (ED) as a community-based USC for their urgent vs non-urgent health care needs.^{6,10}

CONCLUSION

The findings from this study suggest that adults with back pain are more likely to report having a USC than those with other health problems but not back pain. Relatively healthy adults are least likely to have a USC, than those with back pain or other health problems. More research is needed to identify optimal arrangements for USC to ensure that patients receive both specialized and primary care services as appropriate to their needs.

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BIBLIO/REFERENCES

1. Agency for Healthcare Research and Quality (AHRQ, Rockville, MD). 2009 *National Healthcare Quality Report* (NHQR), and 2009 *National Healthcare Disparities Report* (NHDR). <http://www.ahrq.gov/qual/qrd09.htm> (downloaded July 15,2010)
2. Agency for Healthcare Research and Quality (AHRQ, Rockville, MD). National Healthcare Disparities Report: Background on the Measures Development Process. <http://www.ahrq.gov/qual/nhdr02/nhdrprelim.htm> (downloaded July 15,2010)
3. Agency for Healthcare Research and Quality (AHRQ, Rockville, MD). 2009 National Healthcare Quality and Disparities Reports: Data Sources Appendix. <http://www.ahrq.gov/qual/qrd09/datasources/> (downloaded July 15,2010)
4. Agency for Healthcare Research and Quality (AHRQ, Rockville, MD). National Healthcare Disparities Report: List of Measures. <http://www.ahrq.gov/qual/nhdrmeasures/listmeasure.htm> (downloaded July 15,2010)
5. Viera AJ, Pathman DE, Garrett JM. Adults' lack of a usual source of care: A matter of preference? *Annals of Family Medicine*. July/Aug; 2006 4(No4):359–365. 2006. doi: 10.1370/afm.557. [PubMed: 16868240]
6. Sarver JH, Cydulka RK, Baker DW. Usual source of care and nonurgent emergency department use. *Acad Emerg Med*. Sept; 2002 9(9):916–23. 2002. [PubMed: 12208681]
7. DeVoe JE, Fryer GE, Phillips R, Green L. Receipt of preventive care among adults: Insurance status and usual source of care. *Am J Public Health*. May; 2003 93(No 5):786–791. 2003. [PubMed: 12721145]
8. DeVoe JE, Wallace LS, Pandhi N, Solotaroff R, Fryer GE. Comprehending care in a medical home: A usual source of care and patient perceptions about healthcare communication. *Journal American Board of Family Medicine*. 2008; 21(5):441–450. 2008.
9. Phillips RL, Dodoo MS, Green LA, Fryer GE, Bazemore AW, McCoy KI, Petterson SM. Usual source of care: An important source of variation in health care spending. *Health Affairs*. March/April; 28(No 2):567–577. 2009.
10. Walls CA, Rhodes KV, Kennedy JJ. The emergency department as a usual source of medical care: Estimates from the 1998 National Health Interviews Survey. *Acad Emerg Med*. Nov; 2002 9(11): 1140–1145. 2002. [PubMed: 12414462]
11. Blewett LA, Johnson PJ, Lee B, Scal PB. When a usual source of care and usual provider matter: Adult prevention and screening services. *J Gen Intern Med*. 2008; 23(9):1354–60. 2008. [PubMed: 18506542]
12. Winters P, Tancredit D, Fiscella K. The role of usual source of care in cholesterol treatment. *J Am Board Fam Med*. March/April; 2010 23(No 2):179–185. 2010. doi: 10.3122/jabfm.2010.02.090084. [PubMed: 20207928]
13. Smith MA, Bartell JM. Changes in usual source of care and perceptions of health care access, quality, and use. *Medical Care*. Oct; 2004 42(No 10):975–984. 2004. [PubMed: 15377930]
14. Everett CM, Schumacher JR, Wright A, Smith MA. Physician assistants and nurse practitioners as a usual source of care. *Journal of Rural Health*. Fall;2009 25(No 4):407–414. 2009. [PubMed: 19780923]
15. Minden SL, Hoaglin DC, Hadden L, Frankel D, Robbins T, Perloff J. Access to and utilization of neurologists by people with multiple sclerosis. *Neurology*. 2008; 70:1141–1149. 2008. doi: 10.1212/01.wnl0000306411.46934.ef. [PubMed: 18362274]
16. Smith M. Identifying episodes of back pain using Medical Expenditures Panel Survey (MEPS) data: Patient experience, use of services, and chronicity. *Journal of Manipulative and Physiological Therapeutics*. October; 2010 33(No8):562–575. 2010. doi:10.1016/j.jmpt.2010.08.017. [PubMed: 21036278]
17. Agency for Healthcare Research and Quality (AHRQ). Medical Expenditures Panel Survey (MEPS). Access page to Online Workbook: http://www.meps.ahrq.gov/mepsweb/about_meps/online_workbook.jsp

18. Elixhauser, A.; Steiner, CA.; Whittington, CA.; McCarthy, E. Healthcare cost and utilization project, HCUP-3 research note. Agency for Healthcare Research and Quality; Rockville, MD: 1998. Clinical classifications for health policy research: Hospital inpatient statistics, 1995. AHCPR Pub. No. 98-0049
19. Hayward RA, Bernard AM, Freeman HE, Corey CR. Regular source of ambulatory care and access to health services. *Am J Public Health.* April; 1991 80(No4):434–438. 1991. [PubMed: 2003619]
20. Williams, CH. The Synthesis Project, Issue 1. Robert Wood Johnson Foundation; 2002. From Coverage to Care: Exploring Links Between Health Insurance, a Usual Source of Care and Access. Published: September 2002 <http://www.rwjf.org/pr/product.jsp?id=20113>
21. Carter SK, Rizzo JA. Use of outpatient physical therapy services by people with musculoskeletal conditions. *Physical Therapy.* May; 2007 87(No 5):497–512. 2007. [PubMed: 17374630]
22. Smith M, Carber L. Chiropractic health care in Health Professional Shortage Areas (HPSAs) of the U.S. *American Journal of Public Health.* Dec; 2002 92(No. 12):2001–2009. [PubMed: 12453823]
23. McCann J, Phillips RL, Green LA, Fryer GE. Chiropractors are not a usual source of primary health care. *Am Fam Physician.* 2004; 69(11):2544. 2004. <http://www.graham-center.org/online/graham/home/publications/onepagers/2004/op28-chiropractors-source.html>. [PubMed: 15202691]

Practical applications

Back pain sufferers are more likely to have a USC than those without back pain.

Given that the nature of back pain may characteristically be a recurrent, episodic, or longterm chronic condition, individuals may use the services of spine care specialists on an ongoing basis.

Health Care Providers identified as USC should coordinate the delivery of optimal health care, to ensure that patients receive both specialized and primary care services as appropriate to their needs.



Figure 1. Two-Stage Hypothesis Testing of USC for Back Pain: Sample sizes, Hypothesis tests, and Results.

Table 1

Provider Types* specified by Adult MEPS Respondents as their Usual Source of Care, for the three groups: Individuals with Back Pain, Individuals reporting Other Condition but not Back Pain, and Individuals reporting No Condition during the MEPS 2-year longitudinal data collection timeframe (MEPS Panels 10, 9, 8).

	Back Pain	Other Condition not Back Pain	No Condition
MEPS Panel 10	(n=856)	(n=3,341)	(n = 184)
	MD-GP / FP / Internist	MD-GP / FP / Internist	MD-GP / FP / Internist
	MD-OB/Gyn	MD-OB/Gyn	MD-OB/Gyn
	MD-Cardiologist	MD-Cardiologist	
	DO-Osteopath	DO-Osteopath	
	MD-Geriatrician	MD-Geriatrician	
	MD (Other Specialist)	MD (Other Specialist)	MD (Other Specialist)
	Nurse/Nurse Practitioner	Nurse/Nurse Practitioner	Nurse/Nurse Practitioner
	Physician Assistant (PA)	Physician Assistant (PA)	
	DC-Chiropractor	DC-Chiropractor	
MEPS Panel 9	(n=951)	(n=3,415)	(n=203)
	MD-GP / FP / Internist	MD-GP / FP / Internist	MD-GP / FP / Internist
	MD-OB/Gyn	MD-OB/Gyn	MD-OB/Gyn
	MD-Cardiologist	MD-Cardiologist	
	DO-Osteopath	DO-Osteopath	DO-Osteopath
	MD-Geriatrician	MD-Geriatrician	
	MD (Other Specialist)	MD (Other Specialist)	MD (Other Specialist)
	Nurse/Nurse Practitioner	Nurse/Nurse Practitioner	
	Physician Assistant (PA)	Physician Assistant (PA)	Physician Assistant (PA)
	DC-Chiropractor	DC-Chiropractor	
MEPS Panel 8	(n=907)	(n=3,705)	(n=227)
	MD-GP / FP / Internist	MD-GP / FP / Internist	MD-GP / FP / Internist
	MD-OB/Gyn	MD-OB/Gyn	MD-OB/Gyn
	MD-Cardiologist	MD-Cardiologist	MD-Cardiologist
	DO-Osteopath	DO-Osteopath	
		MD-Geriatrician	
	MD (Other Specialist)	MD (Other Specialist)	MD (Other Specialist)
	Nurse/Nurse Practitioner	Nurse/Nurse Practitioner	Nurse/Nurse Practitioner
	Physician Assistant (PA)	Physician Assistant (PA)	
	DC-Chiropractor	DC-Chiropractor	

* note: For cogency of data presentation, the following MD Specialist types are infrequently identified as USC Provider Type and are grouped within "MD (Other Specialist)" category in this table: Neurologist, Endocrinologist, Gastroenterologist, Nephrologist, Oncologist, Pulmonologist, Rheumatologist, Psychiatrist, Surgery.