

Regular Source of Ambulatory Care and Access to Health Services

ABSTRACT

Background: To examine why people lack a regular source of ambulatory care (RSAC) and explore whether this commonly used access measure accurately identifies population subgroups at risk for barriers to continuity care.

Methods: Using data from a 1986 national telephone survey, we performed a content analysis of subjects' verbatim reports as to why they lacked an RSAC (n = 5,748).

Results: The 16.4 percent of respondents who lacked an RSAC gave the following reasons: 1) financial problems, 8 percent; 2) local resource inaccessibility, 5 percent; 3) not wanting a regular source of ambulatory care, 61 percent; and 4) transitory loss of their regular source of ambulatory care, 18 percent. However, some sociodemographic subgroups reported substantially more problems with access barriers, and these disparities were often not detected by the global measure, RSAC. The poor were not more likely than the non-poor to lack an RSAC (odds ratio [OR] = 0.8; 95% confidence interval, [0.6, 1.1]), but were much more likely to lack an RSAC for financial reasons (OR = 5.2 [2.6, 10.6]). Similarly, rural respondents were not more likely than urban dwellers to lack an RSAC, but were more likely to lack an RSAC because of local resource inaccessibility (OR = 5.8 [2.8, 11.9]).

Conclusions: We conclude that the global measure, RSAC, is not an accurate indicator of whether population subgroups have access barriers to obtaining a source of continuity care. (*Am J Public Health* 1990; 81:434-438)

Rodney A. Hayward, MD, Annette M. Bernard, MD, MSPH, Howard E. Freeman, PhD, and Christopher R. Corey, MA

Introduction

Substantial effort and funds are devoted to monitoring access to health services in the United States.¹⁻¹⁰ Whether or not people have a regular source of ambulatory care has been a traditional measure in surveys on access and use of health services.^{4-7,9,11-12} It has been recognized that access problems, such as financial barriers and provider unavailability, are not the only reasons for not having a regular source of ambulatory care.¹³⁻¹⁴ Yet this indicator is often used to compare the access to continuity of care for different sociodemographic subgroups. It is sometimes assumed that the absence of a regular source of ambulatory care is primarily accounted for by access barriers. Whether or not this characteristic identifies groups that are at high risk of not receiving continuity of care because of access barriers has not been critically evaluated.

To evaluate the usefulness of this indicator as a measure of health services access, we analyzed data from the 1986 Robert Wood Johnson Foundation's access to health care survey. The analyses had three main objectives: 1) to identify the reasons Americans lack a regular source of ambulatory care; 2) to examine whether or not such reasons vary by demographic subgroup; and 3) to determine if the absence of a regular source of ambulatory care identifies sociodemographic subgroups at high risk for not obtaining continuity of care because of access barriers.

Methods

This 1986 national telephone survey used random-digit dialing and had a response rate of 76 percent. The Waksberg

screening procedure was used to minimize the number of nonworking numbers dialed.¹⁵ Persons with chronic or serious medical illnesses were oversampled to allow for adequate evaluation of access problems of persons with major health problems. The results presented are weighted to produce estimates for the US population. Detailed descriptions of the weighted-probability sampling technique have been published previously,^{5,8,10,16} and the interview and schedule data are available from the Inter-University Consortium for Political and Social Research at The University of Michigan. Weighted and unweighted sample sizes by social characteristics are presented in the appendix.

As part of the survey, each interviewee was asked, "Is there one person or place in particular you usually go to when you are sick or want advice about your health?" Those who answered "no" to this question were asked: "Many people do not have one particular place to get medical care. What is the reason that you do not have a regular doctor or place to go?" Interviewers were instructed to record the responses to this item verbatim.

The survey on access to health care sampled 10,130 Americans, but verbatim responses were stored for a subset of the

Address reprint requests to Rodney A. Hayward, MD, Division of General Medicine, Department of Internal Medicine, University of Michigan Medical Center, 1500 E. Medical Center Drive, 3116 Taubman Center, Ann Arbor, MI 48109-0276. Dr. Bernard is also with that Department; Dr. Freeman and Mr. Corey are with the Department of Sociology, University of California, Los Angeles. This paper, submitted to the Journal December 11, 1989, was revised and accepted for publication August 13, 1990.

TABLE 1—Proportion of Respondents Lacking a Regular Source of Ambulatory Care (RSAC)

	No RSAC	
	n	%
All Respondents	5,748	16.4%
Ages (in yrs.)		
1–12	821	6.4%
13–22	591	19.9%
23–44	1,985	23.7%
45–64	1,318	14.0%
≥65	1,010	9.2%
Health Status		
Excellent/Good	4,833	16.9%
Fair/Poor	887	12.7%
Sex		
Male	2,404	20.9%
Female	3,329	12.2%
Household Income		
Poor	442	18.4%
Near Poor	492	15.8%
Non-poor	3,977	16.0%
Insurance Status		
Insured	4,965	14.8%
Uninsured	450	31.2%
Race or Ethnicity		
Black/Hispanic	695	20.7%
White/Asian	4,809	15.5%
Place of Residence		
Urban	4,813	17.7%
Rural	795	15.3%
Education		
Non-High School Graduate	358	17.6%
High School Graduate	4,337	16.1%
College Graduate	552	18.6%

interviewees; this subset consists of consecutive cases obtained by random-digit dialing ($n = 5,748$), and there are no substantive differences between this subset and the overall sample with respect to key variables (regular source of ambulatory care, age, sex, geographic region, income, ethnicity, or insurance status).

To aid in developing a classification system for categorizing verbatim responses, we asked 20 health care providers to list reasons that people lack a regular source of ambulatory care. This generated a list of 82 specific reasons. This list was then simplified into a five-category classification structure: 1) financial problems; 2) local resource inaccessibility; 3) did not want a regular source of ambulatory care (divided into four subgroups, described below); 4) transitory loss of their regular source of ambulatory care; and 5) no response or response not classifiable. Pilot testing of a sample of actual responses revealed high reliability, and reviewers did not feel that further revisions of the classification structure were needed.

Financial problems included being unable or unwilling to pay the expected

cost of medical care. Local resource inaccessibility included those who reported an inadequate supply of health care providers in their area or who reported logistical problems with getting care (i.e., problems with parking, transportation, or contacting their health care provider).

Two investigators (RAH and AMB) independently reviewed and categorized all verbatim responses. Inter-rater agreement was 96 percent for classification into the five main categories and 94 percent for classification into categories and subcategories. Upon joint review, most disagreements were easily resolved, and when reviewers continued to differ, the response was designated as non-classifiable.

Analyses were performed on five dependent variables: 1) the proportion who did not have a regular source of ambulatory care, and the proportion who lacked a regular source of ambulatory care because of 2) financial problems; 3) local resource inaccessibility; 4) not wanting one; and 5) transitory loss of a regular source of ambulatory care. Each variable was broken down according to eight respondent characteristics: age, sex, self-reported health status, household income, ethnic-

ity, education, medical insurance status, and urban vs. rural residence. For respondents age 22 or younger, main wage earner's education was used.

We also evaluated associations between having a regular source of ambulatory care and receipt of cervical and breast cancer screenings;¹⁰ seeing a physician for serious medical symptoms;¹⁷ and needing medical, surgical, or supportive medical care and not being able to obtain it.^{5,8} We measured receipt of care for serious symptoms using a method developed by Shapiro et al.^{17–18} Each respondent was asked serially about one of five serious symptoms: 1) shortness of breath with light exercise or light work; 2) chest pain while exercising; 3) loss of consciousness; 4) abnormal bleeding; and 5) weight loss of 4.5 kb. or more not caused by dieting. Subjects who reported one or more serious symptoms during the past month were reported as having sought care if they had contacted a physician for any of the symptoms.

Results

Overall, 17.0 percent of respondents reported not having a regular source of ambulatory care. However, analysis of verbatim responses found that 0.6 percent of these respondents had misunderstood the question and actually had a regular source of ambulatory care. Most errors were due to subjects thinking they were being asked if they saw their doctor regularly (i.e., "I have a family doctor, but I don't go in that often."). Correction of these errors did not alter any of the associations between a regular source of ambulatory care and the respondent characteristics. This paper presents results using corrected responses.

After correction for the errant responses, we found that 16.4 percent of all respondents lacked a regular source of ambulatory care (Table 1). Bivariate comparisons showed that those aged 13 to 44 were more likely than other age groups to lack a regular source of ambulatory care. Also, not having a regular source of ambulatory care was more common among the uninsured, those in excellent or good health, males, Hispanics and Blacks.

Table 2 shows the reasons respondents lacked a regular source of ambulatory care, as a percentage of those lacking a regular source of ambulatory care and as a percentage of the total sample. Of the 841 respondents who reported not having a regular source of ambulatory care, 8 percent reported not having one because of

TABLE 2—Reasons for Lacking a Regular Source of Ambulatory Care (RSAC)

Reason for Not Having an RSAC	Percent of Those Who Lack an RSAC (n = 841)	Percent of All Respondents (n = 5,748)
Financial problems	8	1.4
Local resource inaccessibility	5	0.8
Did not want an RSAC	61	9.9
No health problems	41	6.7
Use alternative health care	5	0.8
Don't like to go to the doctor	5	0.8
Prefer multiple sources of care	7	1.1
No explanation	3	0.5
Transitory loss of RSAC	18	2.9
No response/unintelligible	8	16.4%
Lack an RSAC	100%	16.4%

financial barriers, and 5 percent because of local resource inaccessibility. In contrast, 61 percent reported not wanting a regular source of ambulatory care; most of these reported not having perceived a need for care. In addition, 18 percent reported a transitory loss of their regular source of ambulatory care, and 8 percent had no answer available. Overall, 2.2 percent of all respondents reported lacking a regular source of ambulatory care because of financial barriers or local resource inaccessibility (Table 2).

To evaluate the relative associations between the respondents' sociodemographic characteristics and the dependent variables (no regular source of ambulatory care and the four reasons people reported not having a regular source of ambulatory care), we computed logistic regression models for each dependent variable (Table 3). Respondents aged 13–44 were more likely than those in other age groups not to have a regular source of ambulatory care. This difference was distributed among the four reasons for lacking a regular source of ambulatory care (Table 4). Those in excellent or good health were more likely to lack a regular source of ambulatory care, chiefly because of not wanting one. Men were more likely than women to lack a regular source of ambulatory care due to a greater likelihood of having financial problems, not wanting a regular source of ambulatory care, and transitory loss of their regular source of ambulatory care (Table 3). The uninsured were more likely than the insured to lack a regular source of ambulatory care, due to a greater likelihood of having financial problems, not wanting a regular source of ambulatory care, and transitory loss of their regular source of ambulatory care.

The poor were not found to be more likely than the non-poor to lack a regular

source of ambulatory care, but were more likely to lack a regular source of ambulatory care for financial reasons (Table 3). Similarly, level of education and place of residency were not associated with having a regular source of care, however, those with less education were more likely to report a financial barrier to obtaining a regular source of ambulatory care, and rural respondents were much more likely . . .” Level of education was even less likely to be associated with having a regular source of ambulatory care, but those with less education were more likely to report a financial barrier to obtaining a regular source of ambulatory care (Table 3). Yet rural respondents were much more likely to lack a regular source of ambulatory care because of local resource inaccessibility (Table 3). In all these instances, the global measure, regular source of ambulatory care, failed to identify those with greater risk for having access barriers to a regular source of ambulatory care.

However, lacking a regular source of ambulatory care was a risk factor for not receiving recommended medical care (Table 4). Those who did not have a regular source of ambulatory care were less likely to have received breast and cervical cancer screening and to have seen a physician when they had a serious medical symptom, and they were more likely to report being unable to obtain medical or surgical care they needed during the past year. They were also less satisfied with the medical care they had received.

Discussion

Whether or not people have a regular source of ambulatory care has been a commonly used process measure of access and is used as an indicator of whether the respondent has a source of continuity

of care. Having a regular source of ambulatory care is felt to be particularly important for those with chronic conditions as well as for maternity and child care. Whether having a source of continuity of care improves efficiency or promotes better quality of care has not been well studied, and our results do not shed light on this issue. However, we did find that lacking a regular source of ambulatory care identifies a group that is less likely to receive recommended health services and that is less satisfied.

The presence or absence of a regular source of ambulatory care is also used to evaluate different population subgroups' access to obtaining a source of continuity of care. In this study, we found that the global measure, regular source of ambulatory care, could not be relied upon for this purpose. First, we found that most people who lack a regular source of ambulatory care do not report access barriers as the reason. Only 13 percent of those who lacked a regular source of ambulatory care reported problems with finances or availability of local health care providers, whereas 61 percent reported not wanting one. Although each study employed slightly different classification structures, our findings of why people lack a regular source of ambulatory care are consistent with previous reports.^{13–14}

Second, in most instances, regular source of ambulatory care was a poor indicator of which groups were more likely to have access barriers to obtaining continuity of care. For instance, rural respondents were no more likely than urban respondents to lack a regular source of ambulatory care; however, a rural residence was the only major risk factor for having problems with local resource inaccessibility. Therefore, relying upon the global measure would be misleading in terms of the importance of access problems for rural residents in obtaining a source of continuity of care. Similarly, of the three variables most strongly associated with lacking a regular source of ambulatory care due to financial problems, two (household income and level of education) were not associated with the global measure, regular source of ambulatory care.

This study has several limitations. Telephone surveys bypass the 5 percent to 10 percent of the population who do not have telephones, resulting in underrepresentation of the poor, elderly, and uninsured,^{19–21} groups that are particularly at risk for access problems. Still, supplemental face-to-face interviews con-

TABLE 3—Odds Ratios for Lacking a Regular Source of Ambulatory Care (RSAC) Controlling for Other Factors in Logistic Regression Models (n = 5,748)

	Odds Ratio (95% Confidence Intervals)				
	No RSAC	No RSAC because of financial problems	No RSAC because of local resource inaccessibility	Did not want an RSAC	Transitory loss of RSAC
Age (yr)					
1–12	0.2 (0.1, 0.3)	0.6 (0.2, 1.8)	0.1 (0.1, 0.3)	0.1 (0.1, 0.2)	0.3 (0.1, 0.7)
13–22	0.8 (0.6, 1.1)	0.6 (0.2, 1.06)	1.2 (0.4, 3.6)	0.6 (0.4, 1.0)	0.9 (0.5, 1.6)
23–44	1.0	1.0	1.0	1.0	1.0
45–64	0.5 (0.4, 0.6)	0.6 (0.3, 1.4)	0.8 (0.4, 1.9)	0.5 (0.4, 0.7)	0.5 (0.3, 0.8)
≥65	0.4 (0.3, 0.6)	0.4 (0.1, 1.0)	0.9 (0.3, 2.3)	0.4 (0.3, 0.6)	0.3 (0.1, 0.6)
Health Status					
Excellent/Good	1.4 (1.1, 1.9)	1.9 (0.8, 4.6)	0.5 (0.2, 1.2)	1.5 (1.0, 2.2)	1.2 (0.6, 2.2)
Fair/Poor	1.0	1.0	1.0	1.0	1.0
Sex					
Female	1.0	1.0	1.0	1.0	1.0
Male	1.7 (1.4, 2.0)	1.8 (1.0, 3.3)	1.0 (0.5, 2.0)	1.8 (1.5, 2.3)	1.4 (1.0, 2.0)
Household Income*					
Poor	0.8 (0.6, 1.1)	5.2 (2.6, 10.6)	0.9 (0.2, 3.1)	0.6 (0.4, 1.0)	1.5 (0.8, 2.9)
Near-Poor	0.9 (0.7, 1.2)	1.8 (0.7, 4.3)	0.8 (0.2, 2.7)	1.2 (0.8, 1.7)	1.0 (0.5, 2.0)
Non-poor	1.0	1.0	1.0	1.0	1.0
Insurance Status					
Insured	1.0	1.0	1.0	1.0	1.0
Uninsured	2.0 (1.5, 2.7)	3.0 (1.5, 6.0)	0.7 (0.2, 3.1)	1.8 (1.3, 2.6)	1.8 (1.1, 3.2)
Race or Ethnicity					
Black/Hispanic	0.9 (0.7, 1.2)	0.7 (0.3, 1.5)	0.9 (0.3, 3.1)	1.3 (1.0, 1.8)	0.6 (0.3, 1.2)
White/Asian	1.0	1.0	1.0	1.0	1.0
Place of Residence					
Urban	1.0	1.0	1.0	1.0	1.0
Rural	1.0 (0.8, 1.2)	0.7 (0.4, 1.4)	5.8 (2.8, 11.9)	0.7 (0.6, 0.9)	1.3 (0.9, 1.9)
Education					
Non-High School Graduate	0.9 (0.7, 1.1)	2.5 (1.3, 4.8)	0.4 (0.1, 1.2)	1.2 (0.9, 1.7)	0.8 (0.4, 1.5)
High School Graduate [†]	1.0	1.0	1.0	1.0	1.0
College Graduate	0.8 (0.6, 1.1)	0.5 (0.2, 0.9)	1.3 (0.6, 2.8)	1.2 (0.9, 1.5)	1.7 (1.1, 2.5)

*Poor is defined as household income <100 percent of the federal poverty level, near-poor is 100–150 percent of the poverty level, and non-poor is more than 150 percent of this level.
[†]Includes those with some college.

ducted in 1986 demonstrated, as others have found,^{19–21} that inclusion of non-telephone households would affect percentage estimates only slightly. Nonetheless, small percentage differences in national surveys can represent millions of people. Furthermore, both survey techniques completely miss the homeless and those in institutions. In addition, the results are self-reported and are therefore dependent upon the reliability of respondents' recall. We are not able to determine whether population subgroups have different thresholds in reporting an access barrier. Also, 1.4 percent of respondents did not have a classifiable verbatim response. Although we found no pattern of one group being statistically more likely to have no available response, it may be that some of the weaker associations or trends might have been altered if responses had been complete. Finally, some of those who have a transitory loss of their regular source of ambulatory care or do not cur-

TABLE 4—Receipt of Recommended Medical Care and Patient Satisfaction among Those with and without a Regular Source of Ambulatory Care (RSAC)			
	Have an RSAC %	Do not have an RSAC %	Differences (95% CI)
Pap smear within the past year*	56	46	10 (3, 17)
Breast examination by physician within the past year [†]	59	31	28 (18, 37)
Mammogram within the past year**	22	8	14 (5, 23)
Doctor visit for serious symptom during the past month ^{††}	66	42	24 (10, 27)
Needed medical or surgical care during past year, but was unable to get it	7	12	-5 (-7, -3)
Completely satisfied with last doctor visit	85	75	10 (5, 14)

*For women 20 years or older.
[†]For women 40 years or older.
^{**}For women 50 years or older.
^{††}Percentage of those respondents who had 1) shortness of breath with light exercise/work; 2) exertional chest pain; 3) loss of consciousness; 4) abnormal bleeding; or 5) unexplained weight loss during the past month, and who saw or spoke to their doctor about it.

rently want one, may have unreported access barriers or may encounter access problems if and when they try to obtain one.

We conclude that most people who do not have a regular source of ambulatory care report that they do not want one, and the global measure, regular source of

ambulatory care, fails to identify those sociodemographic subgroups who are at greater risk of having barriers to obtaining a source of continuity of care. Therefore, if we are truly interested in who is at risk for access barriers to obtaining continuity of care, the reason for lacking a regular source of ambulatory care must be evaluated. □

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References

1. Mundinger MO: Health service funding cuts and the declining health of the poor. *N Engl J Med* 1985; 313:44-47.
2. Davis K, Gold M, Makuc D: Access to health care for the poor: Does the gap remain? *Annu Rev Public Health* 1981; 2:159-182.
3. Iglehart JK: Medical care of the poor—a growing problem. *N Engl J Med* 1985; 313:59-63.
4. Aday LA, Andersen RM: The national profile of access to medical care: Where do we stand? *Am J Public Health* 1984; 74:1331-1339.
5. Hayward RA, Shapiro MF, Freeman HE, Corey CR: Inequities in health services among insured adults. Do working-age adults have less access than the elderly? *N Engl J Med* 1988 June; 318:1507-1512.
6. Aday LA, Andersen R: Development of Indices of Access to Medical Care. Ann Arbor, MI: Health Administration Press, 1975.
7. The Robert Wood Johnson Foundation Update Report on Access to Health Care for the American People. Princeton, NJ: 1983.
8. Freeman HE, Blendon RJ, Aiken LH, Sudman S, Mullins CF, Corey CR: Americans report on their access to health care. *Health Affairs* 1987; ??:6-13.
9. Davis K, Gold M, Makuc D: Access to health care for the poor: does the gap remain? *Annu Rev Public Health* 1981; 2:159-182.
10. Hayward RA, Shapiro MF, Freeman HE, Corey CR: Who gets screened for cervical and breast cancer? results from a new national survey. *Arch Intern Med* 1988; 48:1177-1181.
11. Bloom BL: Current Estimates from the national health interview survey: US, 1981. DHHS Pub. No. 82-1569 vital and health

- statistics; series 10; no. 148. Washington, DC: National Center for Health Statistics, 1982.
12. Schoenborn CA, Marano M: Variant Estimates from the National Health Interview survey: US 1987. DHHS Pub. No. 88-1594 vital and health statistics; series 10; no. 166. Washington, DC: National Center for Health Statistics, 1988.
13. Bloom B, Jack SS: Persons With and Without a Regular Source of Medical Care. DHHS Pub. No. 85-1579 vital and health statistics; series 10; no. 151. Washington, DC: National Center for Health Statistics, 1985.
14. Andersen RM, Lyttle CS, Cornelius LJ: Sources and financing of medical care. *In*: Andersen RM, Aday LA, Lyttle CS, Cornelius LJ, Chen M (eds): Ambulatory Care and Insurance Coverage in an Era of Constraint. Chicago: Pluribus Press, 1987; 49-73.
15. Waksberg J: Sampling methods for random digit dialing. *J Am Stat Assoc* 1978; 73:40-46.
16. Sudman S, Freeman HE: The use of network sampling for locating the seriously ill. *Med Care* 1988; 20:992-999.
17. Shapiro MF, Hayward RA, Freeman HE, Sudman S, Corey CR: Out-of-pocket payments and use of care for serious and minor symptoms: results of a national survey. *Arch Intern Med* 1989; 149:1645-1648.
18. Shapiro MF, Ware JE Jr, Sherbourne CD: Effects of cost sharing on seeking care for serious and minor symptoms: results of a randomized controlled trial. *Ann Intern Med* 1986; 104:246-251.
19. Corey CR, Freeman HE: Use of telephone interviewing in health care research. *Health Serv Res* 1990; 25:129-144.
20. Banks MJ, Anderson RM: Estimating and Adjusting for Nonphone Noncoverage Bias Using Center for Health Administration Studies Data. Health Survey Research Methods. DHHS Pub. No. (PHS)84-3346. Washington, DC: Department of Health and Human Services, 1984.
21. Marcus AC, Crane LA: Telephone surveys in public health research. *Med Care* 1986; 24:97-112.

APPENDIX—Weighted and Unweighted Sample Size for Those with and without a Regular Source of Ambulatory Care (RSAC)		
	Weighted Sample Size*	Unweighted Sample Size
Total Sample	2,626	5,748
Has an RSAC	2,196	4,904
No RSAC	430	844
Financial problem	(36)	(65)
Resource inaccessibility	(21)	(45)
Don't want an RSAC	(262)	(507)
Transitory loss of RSAC	(76)	(159)
Unclassifiable	(35)	(68)
Age		
1-12 years	517	821
13-22 years	402	591
23-44 years	931	1,985
45-64 years	468	1,318
≥65	308	1,010
Health Status		
Excellent/Good	2,285	4,833
Fair/Poor	335	887
Sex		
Male	1,267	2,404
Female	1,359	3,329
Household Income		
Poor	250	442
Near Poor	235	492
Non-poor	1,825	3,977
Race or Ethnicity		
Black/Hispanic	435	695
White/Asian	2,156	4,809
Place of Residence		
Urban	1,813	3,840
Rural	795	1,890
Education		
Non-High School Graduate	358	945
High School Graduate	1,337	2,873
College Graduate	552	1,130

*Represents a conservative estimate of the effective sample size after accounting for design effects.