HHS Public Access

Author manuscript

Disabil Health J. Author manuscript; available in PMC 2016 January 06.

Published in final edited form as:

Disabil Health J. 2009 October ; 2(4): 180–187. doi:10.1016/j.dhjo.2009.06.004.

Continuity in Provider and Site of Care and Preventive Services Receipt in an Adult Medicaid Population with Physical Disabilities

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Abstract

Objective—This study investigated the relationship between continuity of care (having one's own doctor and a regular site of care), and receipt of preventive services in a population of adult feefor-service Medicaid enrollees with physical disabilities.

Methods—A random sample of 555 physically disabled Rhode Island Medicaid enrollees aged 18-64 were surveyed by telephone. Respondents were asked about receipt of six preventive services in the previous year. They were also asked whether they had their own doctor and whether they had a regular site of care. Regression analyses with propensity score corrections for selection bias were used to test the associations between care continuity measures and the number of preventive services received, as well as the receipt of each individual service.

Results—After adjustment for predisposing, enabling and need factors, respondents with their own doctor received 0.73 more preventive services than peers without their own doctor, and respondents who had a usual site of care received 0.85 more services than peers who received care

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at the ED or who had no regular site. The influences of having a regular doctor and a usual site of care varied according to type of preventive service, and these influences appear to be largely complementary rather than overlapping.

Conclusions—Study findings suggest that care models for adults with physical disabilities should include mechanisms to ensure both physician and site continuity. A strong primary care component that links individual patients with a personal doctor, as well as care protocols that ensure receipt of preventive services appears to be optimal for medically needy populations.

Keywords

preventive health services; continuity of care; Medicaid; disability

Preventive services are a vital aspect of primary health care, and may be particularly important to people with disabilities, who have a “thinner margin of health” that places them at risk for a variety of health conditions[1-2]. However, there is substantial evidence that people with physical disabilities are less likely to receive certain preventive services, when compared with the general population. For example, data from multiple years of the National Health Interview Survey indicate that adults with mobility limitations were less likely to have their blood pressure or cholesterol levels checked, and women with mobility limitations were less likely to receive Pap smears, breast exams, and mammograms[3]. Similar disparities in receipt of preventive services among adults with disabilities and those without have been observed in other studies as well[4-8], although several studies have found people with disabilities to be more likely to receive flu vaccine[4-5]. While lack of health insurance is a primary reason for non-receipt of preventive services, barriers remain even among the uninsured. Previous studies have identified continuity of care as a facilitator of the timely receipt of preventive services[9-11]. Continuity of care has been operationalized as having a regular site of care in some studies and as having one's “own doctor” or “regular doctor” in others. While the expected outcomes of care continuity associated with regular provider and regular care site are similar, the mechanisms by which they occur may be different. The benefits of care continuity associated with having a regular site of care may be derived from standardized protocols that are institutionalized to ensure the receipt of annual check-ups and recommended screenings by patients who regularly seek care at that site[12-13].

The benefits of continuity associated with having a personal doctor may similarly result from a given physician's self-imposed care protocols and/or the protocols in place at the site in which she practices. However, having the same doctor on a continuous basis also implies the development of a doctor-patient relationship characterized by physician familiarity with patients’ medical and preventive care needs[14]. Familiarity with medical histories and care needs may be particularly important to the receipt of appropriate care, including preventive services, for populations with chronic illnesses and disabilities[15-19].

Christakis and colleagues investigated the influence of provider continuity on receipt of vaccinations and found that high continuity of provider had a stronger influence for children covered by Medicaid than for the larger sample of children covered by all insurance types[20]. Additionally, a study conducted by Xu in a general US population sample examined the relationship between having one's own doctor and receipt of preventive services using

structural equation modeling to control for the endogeneity of regular provider and regular source of care and found that for some discretionary preventive services, specifically blood pressure and cholesterol tests, having a regular doctor was more important than a regular site of care[21].

In studies focusing on continuity of care and its influence on acute care use in Medicaid populations aged 0-64 years, Gill and colleagues found that receipt of care from a single provider was associated with lower emergency department (ED) use[22] and decreased risk of hospitalization[23]. A third study of this same population designed to differentiate the effect of regular site of care from the effect of regular doctor found that patients with high continuity of medical provider were at lower risk of future hospitalization than patients with low continuity of provider and high continuity of site. Further, the latter group's risk of future hospitalization was not different from that of patients with low continuity of both site and provider[24].

Collectively, the above studies suggest that continuity of provider may be more important than regular site of care in managing health conditions and that continuity of provider and site may vary in importance according to types of preventive services. In this paper, we examine both aspects of care continuity, specifically, whether participants have their own doctor, and whether they have a regular site of care relative to an ED or no reported site.

Methods

The Center for Health Care Strategies funded the Rhode Island Department of Human Services (RI DHS) to conduct a Health Care Needs Assessment of Rhode Island working aged (21-64) adults on fee-for service Medicaid with physical disabilities living in the community, to determine the service needs and unmet needs of that population, for program development and improvement. There were three parts to the needs assessment: 1) focus groups; 2) this survey; and 3) analysis of computerized Medicaid Management Information System (MMIS) data. The survey was comprised of questions adopted from the Behavioral Risk Factor Surveillance System (BRFSS) [http://www.cdc.gov/BRfss/questionnaires/english.htm] and the National Health Interview Survey (NHIS) [http://www.cdc.gov/nchs/about/major/nhis/hisdesc.htm], supplemented by questions derived from the four focus groups with the target population, and was designed to provide baseline information about health status, types and prevalence of health problems and conditions, quality, access and barriers to health care, and unmet needs for medical and support services (a copy of the survey is available from the authors upon request). A sample of randomly selected eligible persons (see Sample below) were mailed an advance letter by the Medicaid program informing them that they would be contacted by phone to complete a needs assessment survey in the following week. Telephone contact with potential sample members was attempted until a target of 500 completed interviews was achieved. A bilingual Hispanic interviewer was available for non-English speaking sampled persons. All surveys were completed during March and April 2001.

Sample

At the time of the survey, the RI Medicaid system was fee-for-service, and beneficiaries selected their own sites of care as well as their own primary care doctor. Using the MMIS, all disabled (i.e., recipients of Supplemental Security Income) RI Medicaid enrollees who were ages 21-64, enrolled in Medicaid for at least one year as of September 30, 2000, and living in the community were identified. Because the medical and supportive service needs of adults with cognitive disabilities, i.e., serious and persistent mental illness and intellectual/developmental disabilities, are different from adults with physical disabilities, the RI DHS decided to focus their resources on this initial needs assessment survey of adults with physical disabilities and to conduct similar surveys tailored to the needs of adults with cognitive disabilities at a later date. Consequently, all persons enrolled in state services for severe and persistent mental illness, enrolled in the state Developmental Disability Waiver Program, or identified on the MMIS as having a recent hospitalization or emergency department visit with a principal diagnosis of schizophrenia were eliminated from the sampling frame.

Survey measures

Independent variables for this research were selected based on the Andersen-Aday individual-level model of health services use[25] as well as previous research identifying factors associated with receipt of preventive services[9,26-29]. Survey information on demographic characteristics (considered predisposing factors within the Andersen-Aday model) (age, sex, race/ethnicity, and education), enabling factors (a regular doctor, a regular source of care, someone to help access medical care, and having health insurance in addition to Medicaid), and need factors (general health status, number of medical problems, and specific diagnoses that have been shown to require a high level of care continuity to avoid medical crises, i.e., diabetes, asthma and heart conditions) was therefore analyzed.

Information on the age (an interval variable) and sex of survey respondents was obtained from the MMIS. Information on race/ethnicity, education, number of health problems, current general health status, having someone to help with health care access, having any insurance in addition to Medicaid, and regular site of care (if any) were obtained from the telephone survey.

Race/ethnicity categories included in the survey were White, Black, Hispanic, Asian, American Indian, or Other. Because of the very small numbers of persons in the Asian, American Indian, and Other categories, these categories were combined into a single “Other” category. Educational levels attained were less than high school, high school, and some college/college graduate. General health status was measured by a question used in the Behavioral Risk Factor Surveillance System and other national surveys: In general would you say your health is...Excellent, Very Good, Good, Fair, or Poor? Responses of Excellent, Very Good, and Good were combined into one category because of relatively small sample sizes in those categories. Sensitivity analyses were then conducted to determine the final form of these variables (see analysis section below).

Health conditions were reported in response to an open-ended question developed for this study based on focus groups with members of the target population that provided insight on how they thought about their health conditions: What health problems do you have that require medical care or medication? The number of health conditions was a continuous variable capturing the number of conditions reported in response to this question. Dichotomous variables were created to indicate self-report of diabetes, asthma, and/or a heart condition. Assistance with health care access was a dichotomous variable indicating that someone (other than their doctor) helped the respondent get medical care and services. Finally, a variable indicating that the respondent had health insurance in addition to Medicaid (typically Medicare) was also included as an enabling factor.

The independent variables of primary interest to this study are *having one's own doctor* (yes, no) and *having a regular site of care*, with 1= private doctor's office, hospital clinic, or community health center, and 0= ED or no usual site of care). The dependent variables of interest were dichotomous indicators of the receipt during the previous year of six preventive services, selected as the most common recommended by the U.S. Preventive Services Task Force (USPSTF) for a population persons with chronic conditions and impairments (see http://www.ahrq.gov/clinic/uspstfix.htm#pocket). A blood pressure check and an annual physical check-up are advised for all members of the general population. For blood sugar and cholesterol checks, flu shots and eye tests, the vast majority of the study sample has either reported a relevant health condition, or is assumed to be at are risk for such a condition based on risk factors associated with poverty and/or disability status. Specifically, respondents were asked: “In the past year, have you had: 1) your blood pressure checked?; 2) your blood checked for glucose or sugar?; 3) your cholesterol level checked?; 4) a flu shot?; 5) a physical checkup/exam?; 6) an eye exam?. In addition, the total number of preventive services received was combined into an index ranging from zero to six.

Analysis

We used a negative binomial regression to evaluate the influence of having one's own doctor and, separately, a regular site of care on the total number of preventive services received during the previous year. This regression approach allows us to adjust for potential confounding effect of the other covariates. Additionally, logistic regression models were used to evaluate the influence of having one's own doctor and regular site on receipt of each of the individual preventive services during the previous year.

In order to help control for selection bias due to (observable) differences between persons with and without their own doctor and with and without a regular site of care, we used a propensity-score-based technique, known as Inverse Probability of Treatment Weighting (IPTW). The goal of this method is to balance the four (with and without own doctor, with and without a regular site of care) “treatment groups” so that, other than the treatment they receive, the groups’ observed characteristics, including risk factors for the outcome, are as similar to each other as possible. The implementation consists of estimating a multinomial logistic propensity score model of the four-valued (own doctor, site of care) treatment using as covariates the observed characteristics of the individuals. The weight for each individual

is the inverse of the estimated propensity score for the (own doctor, site of care) value actually experienced by that individual. The IPTW has proven a useful method of controlling for selection bias that cannot be controlled using simple regression techniques[30-33].

The selection of covariates for the propensity score model was based on recent recommendations in the literature[34]. Rather than selecting covariates related to treatment but not to outcome, covariates related to the outcome are selected even if they have little relation to treatment. Our propensity score model used six covariates that were most unbalanced in their distributions across treatment groups and that were significant in our outcome models, i.e., those that have the highest potential for selection bias if left unbalanced. These included age, race, education, general health status, asthma, and diabetes. We conducted sensitivity analyses constructing propensity scores with additional covariates that were balanced across treatment groups or that were statistically insignificant in the outcome models and found virtually identical results in our outcome models. The outcome models also included gender, medical care access assistance, medical insurance in addition to Medicaid, number of health conditions and heart condition.

We report our negative binomial regression results in terms of marginal effect estimates, the equivalent of coefficient estimates in a linear model, which represent the (average) change in the number of preventive services due to a unit change in the covariate (or due to a discrete change from 0 to 1 for a binary covariate). In the logistic models we report odd ratios, to facilitate interpretation of the results.

Results

The sampling frame of Medicaid participants eligible for this survey was 15,106 persons, from which a sample of 1,800 was randomly selected for contact. Duplicate listings (n=8), as well as persons who had died, moved out of state or were institutionalized (n=197), were eliminated from this sample. Seven hundred and seventy (770) of the remaining 1,406 adults could not be contacted, either because they did not possess a telephone (n=466) or because they were unable to be reached (n=304), and contact was not attempted with the remaining 199 because the target sample size for the survey had been reached.

Contact was made with 636 persons, 72 of whom refused to participate and 8 of whom did not complete the survey. A total of 556 persons agreed to participate and completed the entire survey. Of this number, 31 interviews (5.6%) were completed by a proxy respondent. Thus, the overall response rate was 39.5% (556/1,406); however, the response rate for those contacted was 87% (556/636). A comparison of the survey sample with the full population of eligibles on demographic variables contained in the MMIS revealed only minor differences in representation by gender (57.4% of the eligible population were females vs. 62.2% of the survey sample), although survey respondents were somewhat older (42.7% of the eligible population vs. 53.2% of the survey sample were aged 50-64). Racial and ethnic composition was virtually identical in the sample and the full population.

One survey respondent was missing information on the independent variables, and thus our total sample for analysis was 555 persons. Table 1 presents the distribution of sociodemographic and health status characteristics for the analytic sample.

In regard to our measures of care continuity, approximately one tenth (9.5%) of Medicaid respondents did not have their own doctor, and only 5.6% received care at an ED, or reported no usual site of care at all. In addition, slightly more than half (52.7%) reported receiving care at a private doctor's office, 23.5% at a hospital clinic, and 18.2% at a community health center. Observed imbalance in the distribution of several covariates across (own doctor, site of care) “treatment groups” based on raw data, (including age, gender, race, general health, and asthma, diabetes and heart conditions) was substantially reduced in the propensity score IPT weighted sample, indicating that the latter corrected for most of the selection bias due to observable characteristics (data available from the authors upon request).

The percentage of respondents receiving recommended preventive services in the past year ranged from 95.7% of respondents who received blood pressure checks to 49.5% of respondents who received a flu or pneumonia vaccine (see Table 2).

Results of a negative binomial regression analysis indicated respondents with their own doctor received 0.73 more preventive services on average than peers without a regular doctor (See Table 3). Similarly, having a usual site of care was associated with receiving 0.85 more preventive services relative to receiving care in the ED or having no regular site of care. As expected, these estimates were lower than the 0.84 (own doctor) and 1.03 (site of care) observed without the propensity score adjustment for selection bias (data not shown).

Other factors influencing receipt of more preventive services included having diabetes or asthma, older age, and Hispanic or “other ” race, while a high school or less than high school education (relative to having attended college) was significantly related to the receipt of fewer preventive health services.

The propensity score adjusted logistic regression models for each of the individual preventive services showed that having a doctor of one's own was important for receiving some preventive services but less so for others. Respondents who had their own doctor had 2.03 times the odds of receiving a cholesterol test than those without their own doctor, 1.82 times the odds of receiving a flu shot, and 3.18 times the odds of having a physical exam. The trends in effects of having one's own doctor were smaller for other preventive services examined, and were not significant (see Table 4). Our second measure of care continuity, having a regular site of care, was associated with a higher probability (relative to the ED/no regular site of care reference group) of receiving blood pressure, glucose and cholesterol tests, but not a flu shot, a physical exam or an eye exam (see Table 4).

Discussion

In this study, we found that having one's own doctor, and having a regular site of care, are positively and strongly associated with receiving more recommended preventive services among physically disabled fee-for-service Medicaid enrollees. On a test-specific basis,

having one's own doctor is associated with receipt of cholesterol tests, flu shots and regular physical exams. A regular site of care is associated with receiving blood pressure, glucose and cholesterol tests, independent from provider continuity, but not a flu shot or physical exam. Thus, with the exception of cholesterol tests, our findings suggest a complementarity of influence between continuity of doctor and continuity of care site. Finally, there is no association between care continuity and receipt of an eye exam in this sample.

Our findings are in agreement with Xu's findings based on a national sample of the general population regarding the importance of provider continuity for receipt of a cholesterol test, but, unlike Xu, we found an even stronger association between regular site of care and this test[21]. While both studies found associations between care continuity and receipt of blood pressure tests and flu shots, the importance of regular site versus regular provider varied somewhat, perhaps at least partly due to differences in the providers and sites of care accessed by chronically ill and disabled populations covered by Medicaid versus the general population of patients.

In our study, the odds of receiving a physical exam and a flu shot are higher among respondents with a regular provider. Given the high level of health service utilization associated with the management and exacerbations of multiple health conditions, routine physical exams may fall through the cracks unless provided in the context of a physician's long-term relationship with a patient. Similarly, while flu shots are not generally considered a high priority for healthy middle aged adults, the primary care providers who are familiar with patients' histories may be attuned to the need for a flu shot for their patients with chronic conditions and impairments, regardless of their age.

Findings from this study have implications for policy and program development. As policy makers and Medicaid program directors look to care models that will meet the health care needs of vulnerable populations with chronic illness and simultaneously contain costs, it is important to remember that chronic condition management should include primary preventive services that reduce vulnerability to illness (e.g., flu shouts) and secondary preventive services that monitor for new health conditions (e.g., glucose tests). Disease management programs have demonstrated reductions in utilization associated with avoiding health crises, although caution must be used in evaluating the success of such programs[35,36]. Prevention services are similarly important with a population vulnerable to secondary morbidities.

An important finding of this study is that a regular site of care does not suffice to ensure receipt of preventive services by this population, since the influences of regular site and regular doctor are largely complementary. Nearly half the population surveyed for this study reported four or more chronic health conditions. Although many of these people require multiple doctors to attend to their medical needs, the importance of continuity with a single doctor who is aware of all their health care needs and who is able to track receipt of key routine "wellness" services is important. The Centers for Medicare and Medicaid Services (CMS) are currently developing a "patient-centered medical home" demonstration program tailored for populations with chronic illness that will be tested in eight states[37]. While definitions of a patient-centered medical home vary, a personal physician for every patient is

central to the model. Some have questioned the need for a patient-centered medical home to be physician focused, suggesting that coordination may be successfully accomplished through mechanisms at the organizational level, without the intensive physician involvement mandated by the CMS demonstration model[38]. However, the results of this study suggest that a care model that ensures continuity in care in both provider and site is desirable as these mechanisms do not appear to be duplicative. Our findings suggest that a personal relationship between doctor and patient has benefits over and above institutionalized protocols, and that the latter may be necessary but are not sufficient to achieving desired outcomes in high need populations.

Managed care organizations have long had the potential to provide an effective framework for linking people to primary care physicians and a medical home, and standardizing receipt of preventive services. However, people with chronic conditions and impairments have avoided managed care because of financial disincentives to service access[39]. Fortunately, there are newer care models specifically designed for people with disability that are based in part on the reality that “prevention” for people with disabilities includes improved access to services, which is indeed essential for the avoidance of medical emergencies. In such “disability competent” health care systems, i.e., systems that understand and implement what it takes to keep people with disabilities healthy and living independently, primary care providers are *gate openers* rather than *gate keepers* [40], and wellness is a primary focus. The adage, ”an ounce of prevention is worth a pound of cure” encompasses a variety of types of preventive services, including the services that are the focus of this research.

A prime example is the disability care coordination organization (DCCO), which combines attributes of the medical home and primary care physician with nurse and social worker care coordinators linking clients with needed medical and social services. Most DCCOs contract with Medicaid agencies under a prepaid capitation arrangement. Early quality improvement program findings indicate improved compliance with health care screenings[41], Furthermore, a consumer evaluation in one of the first operational DCCOs over a three year period indicated improved satisfaction with primary care providers and enhanced access to care, among other benefits[42]. Rigorous research is needed to demonstrate that the prevention focus of disability-specific health care models benefit not only the consumer but public and private payers as well.

There are limitations to this study. Since this is a regional study, we cannot generalize our findings to the experience of fee-for-service Medicaid beneficiaries nationally. Although the response rate was 87% among those we contacted, a large number of our sample could not be contacted, reducing the overall response rate to 39%. Although the gender and race representation of our sample are very similar to the sampling frame, it is possible that persons who do not have a telephone or cannot otherwise be contacted differ systematically from our respondents in other important ways that bias our results. In addition, people with intellectual disabilities and serious mental illnesses, many of whom also have physical health problems, are not included in this survey. In fact, it is likely that the “unreached” and excluded populations are less connected to the medical care system than those contacted for our survey, and thus we may be underestimating the scope of the problem.

An inherent drawback of survey data is reliance on self-report for information such as whether or not respondents have their own doctor or have received preventive services. However, we have no reason to believe that any bias associated with self-report is systematic in any way that could affect the results of this study[20,43-44].

Finally, the cross-sectional nature of this research limits our ability to claim strong evidence of a causal relationship underlying study findings, although causality is supported by the theoretical framework we employ as well as the findings of previous research on this population regarding utilization outcomes[22-23]. Our use of propensity score methods helps control for selection bias due to observable differences; however, it is possible that some relevant unobserved factor between those with and without own doctor and/or regular site of care remains unaccounted for.

Despite these limitations, the strengths of this study add weight to our findings pointing to a regular site of care and one's own doctor as two essential features of a delivery system for people with disabilities that enhance access to preventive services. While many chronic conditions are not subject to cure, they are amenable to self-management in collaboration with disability competent systems of care that emphasize prevention as a pathway to improved health and quality of life.

Acknowledgments

This research was supported by a Rhode Island Medicaid Program Fellowship under a grant from the Robert Wood Johnson Foundation. The authors acknowledge the helpful comments on prior drafts of this manuscript by members of the Medicaid Program Research and Evaluation Workgroup.

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Table 1

Selected Sample Characteristics.

	Total n=555
Own Doctor (%)	
Yes	502 (90.4)
No	53 (9.6)
Usual Place of Care (%)	
Private Doctor's Office	292 (52.7)
Hospital Clinic	130 (23.5)
Community Health Center	101 (18.2)
ED or No Usual Place of Care	31 (5.6)
Age in years (mean (sd))	49.2 (11.1)
Gender (%)	
Male	211 (38.0)
Female	344 (62.0)
Race/Ethnicity (%)	
White	385 (69.9)
Black	49 (8.9)
Hispanic	82 (14.9)
Other	35 (6.3)
Education (%)	
Less than High School	254 (45.8)
High School Graduate	160 (28.9)
Any College	140 (25.3)
Medical Care Access Assistance (%)	
Yes	268 (48.3)
No	287 (51.7)
Health Insurance in Addition to Medicaid	
Medicare/Private/Other	149 (27.2)
None	398 (72.8)
General Health Status (%)	
Good to Excellent	139 (25.1)
Fair	238 (43.0)
Poor	176 (31.8)
Number of Health Conditions (%)	
1-3 Conditions	310 (56.3)
4+ Conditions	241 (43.7)
Asthma (%)	72 (13.0)
Diabetes (%)	112 (20.2)
Heart Conditions (%)	211 (38.1)

Note: Percentages are based on available data.

Table 2

Preventive Services Received During Previous 12 Months

	Total n=555
Total number of preventive services received (mean (sd))	4.3 (1.5)
Participants Receiving Each Service (%)	
Blood Pressure Check	530 (95.7)
Blood Sugar Test	410 (78.8)
Cholesterol Test	419 (79.5)
Eye Exam	327 (59.2)
Flu Shot	272 (49.4)
Physical Checkup	455 (82.9)

Note: Percentages are based on available data

Table 3

Marginal Effect Estimates for Number of Preventive Services Received, Correcting for Observable Selection Bias.

Characteristic	Marginal Effect (SE)
Own Doctor	
No	-
Yes	0.731 (0.237)***
Usual Site of Care	
ED or None	-
Yes	0.853 (0.446)*
Age (per year)	0.018 (0.006)**
Sex	
Female	-
Male	0.050 (0.116)
Race/Ethnicity	
White or Black	-
Hispanic/Other	0.332 (0.152)*
Education	
Attended College	-
Did not Attend College	−0.321 (0.131)*
Medical Care Access Assistance	
No	-
Yes	−0.093 (0.115)
Medical Insurance In Addition to Medicaid	
No	-
Yes	0.242 (0.129)
General Health Status	
Good to Excellent	-
Fair to Poor	0.126 (0.149)
Number of Health Conditions	
0-3	-
4 or more	0.077 (0.124)
Asthma	0.326 (0.159)*
Diabetes	0.829 (0.127)***
Heart Condition	0.165 (0.122)

Note: The total N for this negative binomial regression analysis was 538.

*p≤0.05

** p≤0.005

*** p≤0.0001

Table 4

Odds Ratios for the Effects of Own Doctor and Usual Source of Care, Correcting for Observable Selection Bias.

	Blood Pressure	Glucose Test	Cholesterol Test	Flu Shot	Physical Check-up/Exam	Eye Exam
	OR (SE)	OR (SE)	OR (SE)	OR (SE)	OR (SE)	OR (SE)
Own doctor	1.48 (0.76)	1.69 (0.64)	2.03 (0.73)*	1.82 (0.65)*	3.18 (1.13)**	1.89 (0.68)
Usual site of care†	12.52 (6.55)***	3.42 (1.50)**	3.66 (1.46)**	1.00 (0.42)	2.09 (0.88)	0.92 (0.41)

Note: Odds ratios are adjusted for age, sex, race, education, assistance in receiving medical care, health insurance in addition to Medicaid, general health status, number of health problems, and asthma, diabetes and heart conditions.

† Compared to having no usual source of care or using the ED as usual source of care.

* $p \leq 0.05$;

** $p \leq 0.005$;

*** $p \leq 0.0001$.