

# Does Lack of a Usual Source of Care or Health Insurance Increase the Likelihood of an Emergency Department Visit? Results of a National Population-Based Study

**Ellen J. Weber, MD**

**Jonathan A. Showstack,  
PhD, MPH**

**Kelly A. Hunt, MPP**

**David C. Colby, PhD**

**Michael L. Callahan, MD**

From the Division of Emergency Medicine, Department of Medicine, University of California, San Francisco, San Francisco, CA (Weber, Callahan); Institute for Health Policy Studies and Department of Medicine, University of California, San Francisco, San Francisco, CA (Showstack); and the Robert Wood Johnson Foundation, Princeton, NJ (Hunt, Colby).

**Study objective:** We determined whether having a usual source of care or health insurance is associated with the likelihood of an emergency department (ED) visit.

**Methods:** This was a multivariate analysis of the 2000 to 2001 nationally representative Community Tracking Study Household Survey to assess the independent association of usual source of care, health insurance, income, and health status with the likelihood of making 1 or more ED visits in the previous year.

**Results:** Based on a sample of 49,603 adults, an estimated 45.3 million adults reported 79.6 million ED visits in the previous year; 83.1% of these visitors identified a usual source of care other than an ED. Persons with poor physical health status made 48.4% of visits. Adults without a usual source of care were less likely to have had an ED visit than those whose usual source of care was a private physician (odds ratio [OR] 0.75). Uninsured individuals were no more likely to have an ED visit than insured individuals. Poor physical health (OR 2.41), poor mental health (OR 1.51), 5 or more outpatient visits during the year (OR 4.05), and changes in insurance coverage (OR 1.14) or usual source of care (OR 1.32) during the year were associated with an ED visit. Enrollment in a health maintenance organization and satisfaction with one's physician were not independently associated with ED use.

**Conclusion:** ED users are similar to nonusers with regard to health insurance and usual source of care but are more likely to be in poor health and have experienced disruptions in regular care. The success of efforts to decrease ED use may depend on improving delivery of outpatient care. [Ann Emerg Med. 2005;45:4-12.]

0196-0644/\$-see front matter

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doi:10.1016/j.annemergmed.2004.06.023

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### INTRODUCTION

#### Background

Between 1992 and 2002, emergency department (ED) use climbed 23%, from 89.8 million to 110 million visits.<sup>1</sup> Increasing use of the ED is often attributed to visits by individuals who lack a usual source of care or have no health insurance.<sup>2-7</sup> The data for either contention are inconclusive. Although several studies suggest that persons without a usual source of care are disproportionately represented in ED populations,<sup>3,4,8-13</sup> other studies, conducted in EDs with

different populations, disagree.<sup>12,14-18</sup> Data about the association of insurance coverage and ED use are surprisingly sparse and also contradictory.<sup>9,13,15,18-21</sup>

The literature on ED utilization is limited by the fact that most studies are conducted at an individual department and often focus on special populations, such as frequent users or patients with minor illnesses. More important, these studies include only ED visitors, not the general population of health care recipients. Therefore, they cannot assess whether persons with a usual source of care, insurance, or any other characteristic are more or less likely to use the ED.

### Editor's Capsule Summary

#### *What is already known on this topic*

Previous studies report conflicting results regarding whether people without a usual source of care are disproportionately represented among emergency department (ED) patients, but the studies were small and included only persons who visited the ED.

#### *What question this study addressed*

Are individuals without a usual source of care and/or without insurance more likely to have had an ED visit in the previous year compared with individuals with a usual source of care or with insurance?

#### *What this study adds to our knowledge*

By analyzing a large, nationally representative sample of 49,603 adults, the investigators estimated that of 45.3 million adults visiting an ED in 2001 to 2002 83.1% identified a usual source of care other than an ED.

Individuals without a usual source of care were less likely to have had an ED visit than individuals with a private physician; individuals without insurance were as likely to have had an ED visit as those with private insurance. Individuals in poor health were more likely than those in good health to have had an ED visit.

#### *How this might change clinical practice*

Given that ED users appear to be similar to nonusers with regard to health insurance and usual source of care, the success of efforts to decrease ED use may depend on improving delivery of outpatient care.

may result in a perception by hospital administrators that emergency patients are not as valuable to the institution as elective admissions.

### Goals of This Investigation

We analyzed a large, nationally representative sample that contained information on usual source of care, insurance status, demographic characteristics, health status, health care use, and attitudes toward the health care delivery system and included ED users and nonusers. The primary research question was whether individuals without a usual source of care and individuals without insurance were more likely to have had an ED visit in the previous year compared with individuals with a usual source of care or with insurance. We also sought to determine whether other characteristics—income, health status, disruptions in insurance or regular care, and specific features of the usual source of care—distinguish those who used the ED from those who did not.

### MATERIALS AND METHODS

The Community Tracking Study Household Survey, conducted by the Center for Studying Health System Change, is designed to measure health care use and the characteristics associated with use, such as income, education, insurance, and health status.<sup>36</sup> The Center for Studying Health System Change, established in 1995, is a nonpartisan policy research organization located in Washington, DC, that designs and conducts studies focused on the US health care system to inform the thinking and decisions of policymakers in government and private industry. The Community Tracking Study Household Survey has been conducted every 2 years since 1996; data for the current analysis were collected from July 2000 through June 2001.

A family informant provided basic sociodemographic and health insurance information about the family unit. Each adult in the family (including the informant) responded to questions about personal habits; health status; visits to physicians, EDs, and hospitals in the past year; and satisfaction with medical care, including satisfaction with physician choice, and unmet medical needs. Health status was measured by administering the SF-12 Health Survey (Standard US version 1.0, 1994), which contains components for physical and mental health.<sup>37,38</sup> Interviews were conducted for up to 8 members of the household. Households that could not complete the interview in either Spanish or English were excluded.

### Selection of Participants

The sampling methods for the Community Tracking Study have been described.<sup>36,39,40</sup> Briefly, using random-digit dialing, interviews were conducted with households in 60 randomly selected communities, as well as with a national supplemental sample. Additionally, field interviews were conducted in selected areas to provide information on families and individuals who do not have telephones. Using standard epidemiologic weighting methods, the results from the base sample can be extrapolated to

### Importance

Understanding the true relationship between patient characteristics and ED use is essential to crafting successful policies and appropriately directing resources to alleviate ED crowding while improving access to needed health care. Many insurance programs, and particularly public and private health maintenance organizations (HMOs), require beneficiaries to have a primary physician.<sup>22-33</sup> Although having a primary physician may be expected to improve overall health and health care, the continued increase in ED visits implies that such programs have not had a substantial impact on overall ED use.<sup>23,24,26,27,34,35</sup> Understanding the association between having a usual source of care and ED use, as well as the association of other patient characteristics with ED visits, is of critical importance in determining whether such policies should be continued or whether more effective strategies could be designed.

Furthermore, a possibly mistaken belief that individuals who use the ED do not have primary physicians or insurance may contribute to a perception by the public and by policymakers that ED crowding is caused by, and affects, only a relatively small, disenfranchised portion of the US population. Additionally, it

the national civilian, noninstitutionalized, US population.<sup>36</sup> In essence, each individual in the study has an associated weight prescribing the number of people he or she represents in the country.

The 2001 Community Tracking Study survey used 67,255 phone numbers to obtain responses for 59,725 individuals in 32,669 households, for a weighted response rate of 56.2%. Lack of response included partial interviews, refusals, and dialed phone numbers that were not answered.<sup>36</sup> A language barrier accounted for 0.3% of households not interviewed. Although the household informant answered questions about children in the home, individuals younger than 18 years were excluded from the present analyses because they were not interviewed directly, were not the primary decisionmakers with regard to choice of health care services, and because many of the variables used in the analysis (eg, highest education level achieved, smoking, risk-taking, SF-12 results, satisfaction with physician) were not obtained for this age group. The resulting study sample consisted of 49,603 adults.

### Primary Data Analysis

Using the weighted sample, the number of adults reporting 1 or more ED visits in the past year and the total number of ED visits were estimated. Total ED visitors and visits were determined according to usual source of care, insurance status, income, physical and mental health status, and whether the individual interviewed thought that he or she had not received needed care in the past year. Usual source of care was based on the respondent's answer to the following question: "Is there a place that you usually go to when you are sick or need advice about your health? What kind of place is it—a doctor's office, an HMO, a hospital outpatient clinic, some other clinic or health center, an emergency room, or some other place?" For multivariate analyses, usual source of care was grouped into 4 categories: (1) physician's office; (2) "clinic/other location" (HMO, hospital outpatient clinic, some other clinic or health center, and "other"); (3) ED; and (4) no usual source of care (similar to groupings used in the National Ambulatory Medical Care Survey).<sup>41,42</sup>

Logistic regression techniques were used to test the association between specific patient characteristics of interest and the primary dependent variable, whether a person had 1 or more ED visits in the past 12 months, controlling for other patient characteristics and exogenous factors. The test variables included whether a person identified a usual source of care and the location of care, type of insurance, whether his or her insurance coverage had changed in the past 12 months, the respondent's understanding of whether he or she was enrolled in an HMO, household income, and physical and mental health status (using SF-12 scores). Physical and mental health scores for the SF-12 were dichotomized into good versus poor.<sup>37</sup> Control variables included age, sex, race, education, household size, personal habits (smoking, risk-taking behavior), and exogenous geographic characteristics (size of metropolitan area [ $>200,000$  population,  $\leq 200,000$  population, nonmetropolitan area], degree of HMO penetration in the area, and the

area's physician-population ratio). To avoid capitalizing on chance associations, all variables were entered into the multivariate model simultaneously according to a priori hypotheses; stepwise techniques were not used. (See Appendix E1, available at <http://www.mosby.com/AnnEmergMed>, for the rationale for the selection of independent variables.)

We also tested the association of specific characteristics of the usual source of care with ED use, controlling for all other independent (test and control) variables listed above. Because many of the variables characterizing usual source of care were correlated with each other, each was entered by itself into a separate equation. The variables tested in this manner were whether the individual saw the same or a different provider at each visit to their usual source of care, whether the place of usual source of care had changed in the past year, and responses to the following questions: "Are you satisfied or dissatisfied with the choice you personally have for primary care doctors?" and "I trust my doctor to put my medical needs above all other considerations when treating my medical problems." Persons whose last outpatient visit had been to their usual source of care were also asked to estimate the time between calling for the appointment and being treated by a physician and for their rating of "how well your doctor listened to you." Satisfaction with health care was assessed by responses to the questions, "During the past 12 months, was there any time when you didn't get the medical care you needed?" and "Have you been satisfied or dissatisfied with the health care you have received during the past 12 months?" The association between ED use and the total number of outpatient (nonemergency) visits was also tested.

Statistical significance was defined as a probability of a type I error of less than 5% (2-tailed). Results of the multivariate analyses are presented as odds ratios (ORs) with 95% confidence intervals (CIs). All analyses use survey weights that account for probability of selection and differential non-response. Standard errors were estimated with the use of SUDAAN statistical software (Research Triangle Institute, Research Triangle Park, NC) to adjust for the complex survey design.<sup>43</sup>

This study was approved by the Committee on Human Research at the University of California, San Francisco.

### RESULTS

A usual source of care other than an ED was identified by 82.7% of the adult population (Table 1). An ED was the usual source of care for 2.4% of the adult population, and 14.5% did not identify a usual source of care.

An estimated 45.3 million adults reported at least 1 ED visit, resulting in 79.6 million reported visits from July 2000 through June 2001 (Table 2). Among those who used the ED, 83.1% of patients identified a usual source of care other than an ED and accounted for 82.4% of reported visits (Table 2). The majority of these ED visitors obtained their usual care in a private physician's office and had private health insurance (Figure). Five percent of ED visitors (2.3 million persons) identified the ED as

their usual source of care and accounted for 7% of reported visits; 11.6% of ED visitors (5.2 million persons) identified no usual source of care and accounted for 10.3% of reported ED visits.

Among those who used the ED, 85.4% had some form of health insurance and were responsible for 84.8% of all ED visits (an estimated 67.5 million visits), whereas the 14.6% who had no insurance accounted for 15.2% of visits (12.1 million visits) (Table 2). Adults whose income was below the poverty level (<US\$17,661 per year for a family of 4) reported 16.9 million ED visits (Table 2). At the other extreme, persons whose income was at least 4 times the poverty threshold ( $\geq$ \$70,644 per year for a family of 4) reported 21.4 million visits.

On the basis of their SF-12 scores, persons found to be in poor physical health accounted for nearly half of all ED visits (48.4%), and persons in poor mental health made 28% of all visits. Thirty-four percent of the population reported they did not get needed medical services in the past year, and this group accounted for 38% of ED visits.

Of note, the total population estimates derived from our data are consistent with data from the 2001 National Hospital Ambulatory Medical Care Survey, which reported 85.3 million ED visits were by persons aged 15 years or older in 2001, and 14.7% of ED visits were categorized as self-pay.<sup>44</sup>

Compared with persons whose usual source of care was in a private physician's office, those with no usual source of care were less likely to have had an ED visit (OR 0.75, 95% CI 0.67 to 0.82) (Table 3). There was no difference in likelihood of an ED visit between those who obtained care in a private physician's office or in a clinic or other location (OR 1.05, 95% CI 0.99 to 1.12). There was significantly greater likelihood of ED use for persons who identified the ED as their usual source of care (OR 2.60, 95% CI 2.14 to 3.16).

Uninsured persons were equally likely to have had an ED visit as those with private insurance (OR 1.06, 95% CI 0.87 to 1.30). Persons with Medicaid (OR 1.51, 95% CI 1.31 to 1.74) and Medicare (OR 1.19, 95% CI 1.06 to 1.35) were significantly more likely to report an ED visit than those with private insurance. Persons who had a change in insurance coverage during the previous 12 months were more likely to have used the ED than persons without a change (OR 1.15, 95% CI 1.07 to 1.23). Enrollment in an HMO was not associated with ED use (OR 0.98, 95% CI 0.91 to 1.05).

Persons reporting family income below the poverty level were more likely to have visited the ED compared with persons at or above 4 times the poverty threshold (OR 1.28, 95% CI 1.14 to 1.44).

Persons in poor (versus good) physical health were more than twice as likely to have had an ED visit (OR 2.41, 95% CI 2.26 to 2.56), and those with poor (versus good) mental health were also more likely to report ED use (OR 1.51, 95% CI 1.40 to 1.63).

Persons who had made between 1 and 4 nonemergency outpatient visits in the past year were twice as likely (OR 2.05, 95% CI 1.85 to 2.27), and those with 5 or more outpatient

**Table 1.** Usual source of care: US adult population, 2000 to 2001 (estimated number in millions of persons).\*

Usual Source of Care	Persons, No. (%)
<b>Total adult population</b>	199.5 (100)
Physician's office	120.4 (60.3)
HMO <sup>†</sup>	6.2 (3.1)
Hospital outpatient clinic <sup>†</sup>	12.4 (6.2)
Other clinic/health center <sup>†</sup>	23.3 (11.7)
Other place <sup>†</sup>	2.7 (1.4)
ED	4.7 (2.4)
No usual source of care	29.0 (14.5)
Missing	0.9 (0.4)

\*The numbers and percentages may not add to totals because of rounding.  
<sup>†</sup>HMO, hospital outpatient clinic, other clinic or health center, and "some other place" are combined in later results as "clinic/other location" (total 44.6 million persons, 22.3% of population).

visits 4 times as likely (OR 4.05, 95% CI 3.65 to 4.50), to have had an ED visit compared with those with no outpatient visits. Persons who had a change in their usual source of care were more likely to have had an ED visit than those whose usual source of care remained the same (OR 1.32, 95% CI 1.22 to 1.44). Persons who waited for an appointment with their usual source of care more than the median length of time ( $\geq 7$  days) had a lower likelihood of an ED visit than those who waited less than the median time (OR 0.87, 95% CI 0.81 to 0.93). Persons reporting they did not receive needed medical care in the past year were significantly more likely to have had an ED visit compared with those who did not report unmet needs (OR 1.43, 95% CI 1.35 to 1.51), whereas persons satisfied with the health care they received were less likely to have an emergency visit than those who stated they were dissatisfied (OR 0.83, 95% CI 0.76 to 0.91). ED use was not associated with trust in patients' physicians to put their needs above other considerations, satisfaction with choice of primary physician, judgment of the physician's listening skills, or whether the person was treated by the same provider or a different provider at each visit.

## LIMITATIONS

Similar to other survey data, our data may be limited by recall bias and lack of response. The sampling and weighting methods of the Community Tracking Study, however, were designed to include a nationally representative sample and to account for differences in likelihood of selection and differential response rates. The study sample could also potentially underrepresent homeless persons, who might account for a disproportionate share of ED visits.<sup>45</sup> Our estimates of total ED visits and payer mix, however, are similar to estimates from the 2001 National Hospital Ambulatory Medical Care Survey in which the medical records of ED users are reviewed.<sup>44</sup> Therefore, it appears to be unlikely that our inferences and conclusions would change substantially if the data included a larger proportion of the estimated 2.3 to 3.5 million persons

**Table 2.** ED visits according to selected characteristics: US adult population, 2000 to 2001 (estimated number in millions).\*

Population Characteristic	Persons With $\geq 1$ ED Visits, No. (%)	Visits to ED, No. (%)
<b>Total adult population</b>	45.3 (100)	79.6 (100)
<b>Usual source of care</b>		
Physician's office	26.4 (58.3)	43.6 (54.8)
HMO	1.3 (2.9)	2.1 (2.6)
Hospital outpatient clinic	3.8 (8.3)	8.1 (10.2)
Other clinic or health center or place <sup>†</sup>	6.2 (13.6)	11.7 (14.7)
ED	2.3 (5.1)	5.6 (7.0)
No usual source of care	5.2 (11.6)	8.2 (10.3)
<b>Insurance status</b>		
Insured	38.7 (85.4)	67.5 (84.8)
Uninsured	6.6 (14.6)	12.1 (15.2)
<b>Income<sup>‡</sup></b>		
$\geq 4$ Times poverty threshold	14.8 (32.7)	21.4 (26.9)
200%–399% Poverty threshold	14.4 (31.7)	24.2 (30.4)
100%–199% Poverty threshold	9.2 (20.3)	17.1 (21.5)
Less than poverty threshold	6.9 (15.3)	16.9 (21.2)
<b>Physical health status</b>		
Poor	18.0 (39.9)	38.5 (48.4)
Good	27.2 (60.2)	41.1 (51.6)
<b>Mental health status</b>		
Poor	10.1 (22.3)	22.3 (28.0)
Good	35.2 (77.8)	57.3 (72.0)
<b>Did not get needed care</b>		
No, did not have unmet need	28.5 (62.9)	47.3 (59.5)
Yes, had unmet needs	15.3 (33.8)	30.0 (37.7)

\*The numbers and percentages may not add to totals because of rounding and missing values.

<sup>†</sup>Includes "other clinic or health center, and "some other place" as their usual source of care.

<sup>‡</sup>In the 2000 to 2001 Community Tracking Study Household file, the poverty threshold is based on the US Census Bureau 2000 family income poverty threshold, and it varies with family size (eg, the 2000 poverty threshold was an income of US\$17,661 per year for a family of 4).

who are homeless.<sup>46</sup> Because no diagnostic information was available in the Community Tracking Study Household Survey, this study could not assess the reason for or the urgency of the ED visit. It was not the goal of this study to address the issue of "inappropriate use" but rather assess the association between patient characteristics and ED use. More important, such attempted classifications are arbitrary and often contradictory<sup>47,48</sup> and have been shown to have poor interrater reliability and poor ability to predict outcome.<sup>49-51</sup> Finally, the analysis was confined to the responses of surveyed adults, and these results cannot be applied to children.

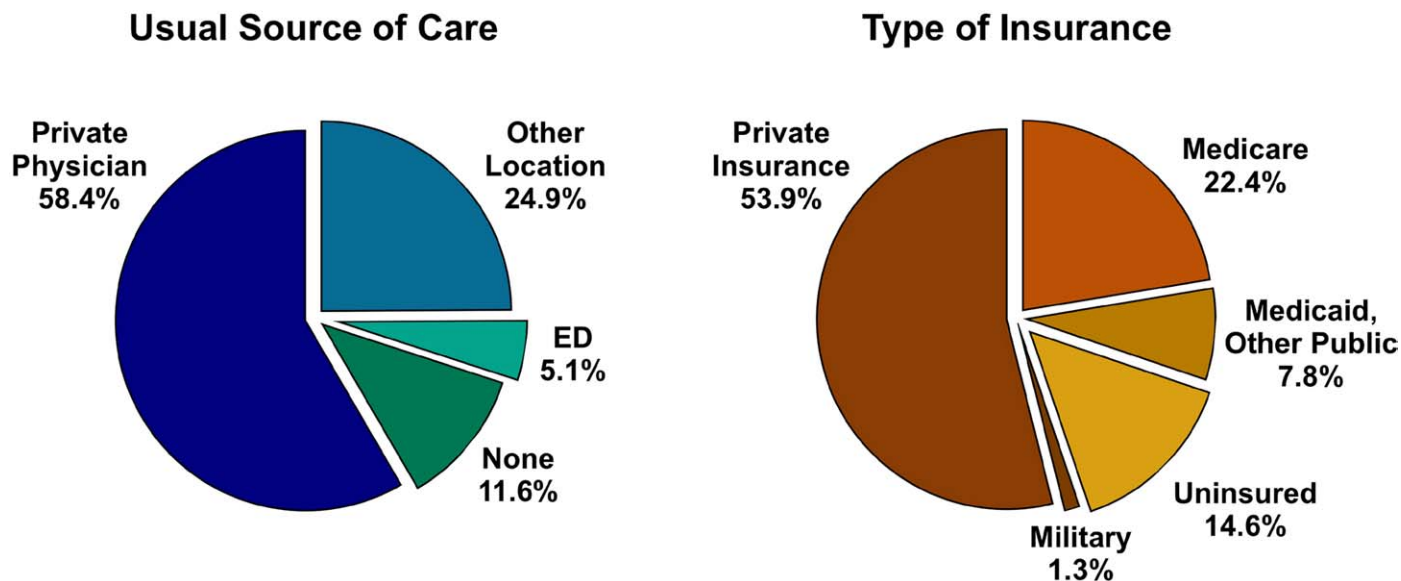
## DISCUSSION

In a nationally representative sample of adults, most ED visits were by persons who had health insurance and a usual source of care. Persons without a usual source of care were less likely than those with a usual source of care to have had an ED visit. Persons who identified the ED as their usual source of care were (unsurprisingly) more likely to have had an ED visit, although they constituted only 5% of users of the ED and accounted for only 7% of all ED visits. Persons without insurance were no more likely to have an ED visit than those with insurance. Persons whose income was below the poverty threshold were somewhat more likely than others to have an ED visit, but these persons accounted for only 1 in 5 visits.

ED use was strongly associated with poor physical health status—nearly half of all visits to the ED were by individuals in poor health—and with high utilization of outpatient services, regardless of whether a person had a usual source of care. To a lesser extent, ED use was associated with poor mental health, Medicaid and Medicare insurance, and interruptions in insurance coverage or source of care. Of note, several characteristics often thought to decrease the need for emergency visits were not associated with less use of the ED, including enrollment in an HMO, early availability of appointments, or satisfaction with one's own physician.<sup>52</sup>

Several previous studies have suggested that having a primary care physician can prevent use of the ED.<sup>3,4,53-55</sup> Grumbach et al<sup>3</sup> reported that two thirds of patients waiting for treatment at the ED of an urban county teaching hospital had no regular source of care. The study by Rosenblatt et al<sup>54</sup> of 1994 Washington State Medicare claims data found that elderly patients with a "principal-care" physician made half as many ED visits as those without such a physician. Gill et al<sup>55</sup> found that Delaware Medicaid recipients who had greater continuity of care with physicians had fewer ED visits.

However, a number of studies indicate that the majority of ED visitors have a usual source of care other than the ED.<sup>9,13,14,56</sup> In a study conducted at 56 teaching hospitals nationwide, Young et al<sup>50</sup> found that 67% of ambulatory ED



**Figure.** Adult users of EDs according to usual source of care and type of insurance, United States, 2000 to 2001. Missing data (0.3% of cases) are excluded.

patients identified a non-ED source of medical care. Lucas and Sanford<sup>18</sup> determined that 73% of “frequent ED users” had a usual source of care. Furthermore, Gill and Riley<sup>17</sup> reported that having a primary care physician had no influence on ED utilization for nonurgent problems, concluding that “simply providing patients with a regular source of care is unlikely to have a significant impact on nonurgent ED utilization without efforts to manage utilization and ensure adequate access to primary care.” In a study of an indigent, uninsured population at an urban teaching hospital, Kwack et al<sup>35</sup> reported that “providing a primary care provider and health care benefits alone was insufficient to reduce ED use.”

Studies of the association of insurance and ED use provide diverse conclusions. Some studies suggest that individuals without insurance are more likely to use the ED for routine, nonemergency care,<sup>9,13</sup> some found that uninsured individuals and those with private insurance were equally likely to have a nonurgent visit,<sup>18,20</sup> and others report that use of the ED for nonurgent visits was lower for uninsured patients.<sup>19,57</sup>

The conflicting results about the influence of a usual source of care and insurance may reflect the fact that most of these studies (1) included only ED patients, precluding comparisons with persons who do not use the ED; (2) were conducted at single or nonrandomly selected institutions whose populations vary substantially<sup>8</sup>; and (3) limited data collection to ambulatory, nonurgent patients, frequent users, or other special populations. In contrast, our results are derived from a population-based sample that provided accurate national population estimates, included a comprehensive set of characteristics, with objective and well-validated measures of physical and mental health, and allowed a comparison of ED users and nonusers. Using population-based data from the 1996 Medical Expenditure Survey of 1996, Fryer et al<sup>21</sup> also reported that

insurance status was not associated with ED use, and individuals without a usual source of care were less likely to have had an ED visit; their study, however, did not control for health status, changes in insurance or usual source of care, HMO membership, market characteristics of HMO penetration and physician-patient ratio, or characteristics of the usual source of care.

ED visits continue to climb despite a growing number of insurance programs that require patients to identify a primary care physician or clinic.<sup>1,22-32,58</sup> Our data may help explain why these programs are failing to stem the tide of ED visits. Only 17% of ED visits nationally were by persons who either had no usual source of care or identified an ED as their regular source of care, and persons without a usual source of care were less likely to use the ED. HMO membership was not associated with less ED use. Thus, although ensuring access to a regular provider may be vital to quality care,<sup>59</sup> our data suggest that such strategies are unlikely to substantially reduce ED visits.

Additionally, our data demonstrate that the increase in ED visits cannot be primarily attributed to use of the ED by persons without insurance or a usual source of care because such individuals account for a minority of visits and are not more likely to have a visit than the rest of the population. This finding also indicates that ED crowding is most likely to affect individuals with insurance and a usual source of care.

In conclusion, persons who use the ED are similar to the general population with regard to insurance coverage, usual source of care, and income. The likelihood of an ED visit is not greater for those who lack insurance or have no usual source of care but is increased among those in poor health and whose regular care is disrupted. The success of efforts to decrease demand for emergency services may depend on strategies that improve the delivery of outpatient care.

**Table 3.** Likelihood of having 1 or more ED visits, United States, 2000 to 2001.\*

Population Characteristic	OR (95% CI)
<b>Usual source of care</b>	
Private physician's office	1.00 (Reference group)
Clinic/other location <sup>†</sup>	1.05 (0.99–1.12)
ED	2.60 (2.14–3.16)
No usual source of care	0.75 (0.67–0.82)
<b>Insurance status</b>	
Private	1.00 (Reference group)
Medicare	1.19 (1.06–1.35)
Military	1.03 (0.83–1.28)
Medicaid/other public	1.51 (1.31–1.74)
Uninsured	1.06 (0.87–1.30)
<b>Change in insurance status in past 12 mo</b>	
No change	1.00 (Reference group)
Change in plan	1.15 (1.07–1.23)
<b>Enrolled in HMO</b>	
Yes	1.00 (Reference group)
No	0.98 (0.91–1.05)
<b>Income<sup>‡</sup></b>	
≥ 4 Times poverty threshold	1.00 (Reference group)
200%–399% Poverty threshold	1.15 (1.07–1.22)
100–199% Poverty threshold	1.29 (1.18–1.40)
Less than poverty threshold	1.28 (1.14–1.44)
<b>(SF-12) Physical health status</b>	
Good	1.00 (Reference group)
Poor	2.41 (2.26–2.56)
<b>(SF-12) Mental health status</b>	
Good	1.00 (Reference group)
Poor	1.51 (1.40–1.63)
<b>No. of outpatient visits in past 12 mo<sup>§</sup></b>	
None	1.00 (Reference group)
1–4	2.05 (1.85–2.27)
≥ 5	4.05 (3.65–4.50)
<b>Change in usual source of care in past 12 mo<sup>§</sup></b>	
No change	1.00 (Reference group)
Change	1.32 (1.22–1.44)
<b>Waited ≥ 7 days for appointment<sup>§</sup></b>	
No	1.00 (Reference group)
Yes	0.87 (0.81–0.93)
<b>Did not get needed care<sup>§</sup></b>	
No, did not have unmet need	1.00 (Reference group)
Yes, had unmet need	1.43 (1.35–1.51)
<b>Satisfaction with health care in past 12 mo<sup>§</sup></b>	
No, not satisfied	1.00 (Reference group)
Yes, satisfied	0.83 (0.76–0.91)

\*Selected ORs for having ≥1 ED visits, adjusted for all of the characteristics included in the table, plus the following control variables: age, sex, race, education, number in household, risk taking, smoking, percentage of population enrolled in HMO, physician-to-patient ratio in geographic area, location in a metropolitan statistical area (MSA; > 200,000 population, ≤ 200,000 population, not in MSA), and missing values.

<sup>†</sup>"Clinic/other location" includes individuals who identified an HMO, hospital outpatient clinic, other clinic or health center, or "some other place" as their usual source of care.

<sup>‡</sup>In the 2000 to 2001 Community Tracking Study Household file, the poverty threshold is based on the US Census Bureau 2000 family income poverty threshold, and it varies with family size (eg, the 2000 poverty threshold was an income of US\$17,661 per year for a family of 4).

<sup>§</sup>Variables characterizing usual source of care were tested in separate equations controlling for other independent variables (see Materials and Methods). Not associated with ED use were trust in primary physician, satisfaction with choice of physician, physician listening skills, or whether patient was treated by same or different provider at each visit.

We thank James D. Reschovsky, PhD, Steven A. Schroeder, MD, and E. John Gallagher, MD, for their advice and suggestions.

Author contributions: EJW, JAS, KAH, DCC, and MLC conceived the study, determined the theoretical model, and interpreted the results. EJW, JAS, and KAH designed the analyses. KAH and JAS provided statistical consultation; KAH programmed the data. EJW drafted the manuscript with contributions from JAS and KAH. All authors contributed substantially to its revision. EJW takes responsibility for the paper as a whole.

Received for publication March 30, 2004. Revisions received June 15, 2004. Accepted for publication June 26, 2004. Available online October 22, 2004.

The interpretations and opinions are those of the authors and may not necessarily reflect those of The Robert Wood Johnson Foundation or the University of California, San Francisco.

The authors report this study did not receive any outside funding or support.

Reprints not available from the authors.

Address for correspondence: Ellen J. Weber, MD, Emergency Department, University of California, San Francisco, Box 0208, 505 Parnassus Avenue, San Francisco, CA 94143-0208; 415-353-1109, fax 415-353-1799; E-mail weber@medicine.ucsf.edu.

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