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Health Insurance

Identifying Affordable Sources of Medical Care among Uninsured Persons

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Objective. To examine the effects of policy, health system, and sociodemographic characteristics on the likelihood that uninsured persons pay a lower price at their regular source of care, or that they are aware of lower priced providers in their community.
Data Sources. The 2003 Community Tracking Study household survey, a nationally representative sample of the U.S. population and 60 randomly selected communities.
Study Design. The survey asked uninsured persons if they paid full or reduced cost at their usual source of medical care, or if they were aware of providers in their community that charge less for uninsured people. We use binomial and multinomial logistic regression analysis to examine the effects of various policy, health system, and sociodemographic characteristics on use and awareness of lower priced providers. We focus especially on the effects of safety-net capacity, measured by safety-net hospitals, community health centers, physicians' charity care, and Community Access Program (CAP) grants.
Principal findings. Less than half of the uninsured (47.5 percent) reported that they used or were aware of a lower priced provider in their community. Multivariate regression analysis shows that greater safety-net capacity is associated with a higher likelihood of having a lower priced provider as the regular source of care and greater awareness of lower priced providers. Lower incomes and racial/ethnic minorities also had a higher likelihood of having a lower priced provider, although health status did not have statistically significant effects.
Conclusion. Although increased safety-net capacity may lead to more uninsured having a lower priced provider, many uninsured who live near safety-net providers are not aware of their presence. Greater outreach designed to increase awareness may be needed in order to increase the effectiveness of safety-net providers in improving access to care for the uninsured.

Key Words. Uninsured, access, safety net, affordable care

The number of uninsured adults has grown by over 6 million since 2000 and by 2004 an estimated 37 million adults lacked health insurance coverage (DeNavas-Walt, Proctor, and Hill 2005). In the absence of health insurance

coverage expansions, subsidizing the direct provision of services to uninsured—such as through Community Health Centers (CHC) and other safety-net providers—is one of the few alternatives policy makers can use to improve access to care for the uninsured. In particular, safety-net providers offer uninsured persons a more affordable place they can use as a regular source of medical care, although most office-based physician practices also provide some amount of charity care (Cunningham 2002; Hadley and Cunningham 2004). A considerable amount of research documents the importance of a regular source of medical care to patient access, satisfaction, continuity, and quality of care (Hayward, Bernard, and Freeman 1991; Lambrew et al. 1996). Affordability has been identified as essential in order for a regular source of care to be effective, especially for uninsured persons (Starfield 1992).

The extent to which uninsured persons have access to a regular source of medical care that is affordable varies dramatically both within and across communities. CHCs and other safety-net providers are not universally available in all communities, and many uninsured do not live near these providers even when they are available (Hadley and Cunningham 2004). While most office-based physicians provide charity care, the amount of charity care they provide on average is very small, varies considerably across specialties and practice types, and has been declining in recent years (Cunningham 2002).

Although surveys have consistently found that the majority of uninsured report having a regular source of medical care (although at lower levels than insured persons), they generally have not asked uninsured respondents whether they are charged less or receive discounts at their regular source of medical care. Therefore, the extent to which the regular source of care includes the key attribute of affordability—at least from the perspective of the uninsured individual—is largely unknown.

Using data primarily from the 2003 Community Tracking Study household survey, this paper examines how the structure and financing of the local safety net, as well as personal characteristics, affect whether an uninsured person pays a lower price at their regular source of care. For uninsured without a regular source of medical care, we examine the extent to which the same set of factors influences awareness of lower priced providers in their community.

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Finally, for uninsured who have a lower priced provider as their regular source of care or are aware of lower priced providers in the community, we examine factors that distinguish between type of providers, focusing especially on differences between physician offices, hospital-based facilities, and clinics.

Conceptual Framework

Health services researchers have long distinguished between "process" and "outcome" indicators of access to medical care (Aday and Andersen 1975). Process indicators—including having a regular source of medical care—reflect characteristics of the delivery system that are key to individuals using services and satisfying medical needs, which are outcome indicators of access. Having a regular source of medical care is important because it provides "... one particular place or health care provider serving as a point of entry into the health care system each time a new problem is experienced" (Starfield 1992, p. 30). Affordability is a key attribute of an effective regular source of medical care, and is arguably much more important for uninsured persons because cost is overwhelmingly their primary barrier to getting needed medical care (Strunk and Cunningham 2004). For uninsured persons who lack a regular source of medical care, awareness of a provider in the community that provides care for free or at lower prices may be critical to gaining entry into the health care system should a need arise. But while numerous studies have examined correlates and determinants of having a regular source of care (eg., see Baker, Stevens, and Brook 1994; Rask et al. 1994; Gallagher et al. 1997), and a few have looked specifically at regular source of care for uninsured (Hadley and Cunningham 2004), there are no large-scale nationally representative studies to our knowledge that have assessed perceptions of the affordability of the regular source of care by uninsured persons.

The extent to which uninsured persons actually have or are aware of lower priced providers will depend on health system characteristics that reflect both the availability and capacity of lower priced providers, as well as the need, enabling, and predisposing characteristics of uninsured individuals that influence their demand for medical care in general, and lower priced care in particular (Andersen 1995).

Health System Characteristics

The most relevant health system characteristics to consider are the availability and capacity of medical care providers who provide services to the uninsured

for free or at reduced cost. These often include the presence and size of major safety-net providers, such as public hospitals, some academic medical centers, community health centers, and other free clinics that receive private and/or public subsidies to care for the uninsured. Most office-based physicians also provide some amount of charity care to uninsured persons. In addition, some communities have taken advantage of federal programs—such as the Community Access Program (CAP)—to integrate and coordinate many of the safety-net services in local communities, as well as enhance linkages with other social service organizations that could facilitate referrals and increase awareness of lower priced providers to uninsured persons.

Need for Medical Care

The need for medical care—as indicated by the presence of health problems and health status—is the largest determinant of health services use (Andersen 1995). Uninsured people who have chronic health care problems have higher need for services and are also likely to incur much higher costs, and therefore they are more likely to have searched for lower priced providers in their community.

General Attitudes and Propensity to Use Medical Care

Individuals differ in terms of their attitudes about health care and in seeking care when a problem arises (Andersen 1995). As with the need for medical care, uninsured individuals who have a greater propensity to seek medical care are more likely to have searched for and identified lower priced providers in their community.

Socioeconomic and Demographic Characteristics

Previous research has documented both economic and racial/ethnic barriers to medical care access (U.S. Department of Health and Human Services 2000; Hargraves and Hadley 2003). Generally, groups that have experienced the greatest difficulty getting needed medical care (e.g., poor and lower income uninsured, racial/ethnic minorities) are more likely to have a lower priced provider as their regular source of medical care. Poor and low-income uninsured face the greatest financial barriers to care, and therefore are more likely to have been referred to or have sought out lower-cost sources of medical care. Similarly, some safety-net providers—such as community health centers—provide translation and other services designed to reduce cultural

and language barriers to care that racial and ethnic minorities often experience in trying to obtain care from other medical providers.

METHODS

Data Source

The primary data source for this analysis is the 2003 Community Tracking Study (CTS) household survey (Strouse, Carlson, and Hall 2003).[1] The survey is designed to produce representative estimates of health insurance coverage, use of services, and access to medical care for the U.S. population and 60 randomly selected communities in 34 states and the District of Columbia. The CTS is primarily a telephone survey, supplemented by in-person interviews of households without telephones in order to ensure representation. The response rate for the survey was 58 percent. Survey weights were poststratified to correct for any differences in nonresponse based on age, sex, race/ethnicity, and education.

The overall sample for the survey includes about 46,600 persons. The sample for this study includes about 4,800 persons less than age 65 who were uninsured on the day of the interview. Although one might expect awareness of affordable providers to be relevant primarily for poor and low-income uninsured persons, all uninsured are included in the analysis regardless of income. Rather than assume that an affordable provider is only relevant for particular income groups, our analysis shows how affordable provider awareness actually varies by income. Sensitivity analyses showed that restricting the sample to low-income uninsured does not materially affect other results (e.g., the effects of health system factors on affordable provider awareness).

Definition of Lower Priced Provider

We define lower priced providers to include all health care providers identified by uninsured survey respondents as providing services at less than full price based on what patients can afford to pay. Lower priced providers include the "traditional" safety-net providers, such as public hospitals, community health centers, and other free clinics, as well as private hospitals and private physician practices that provide free or reduced fee care to uninsured people.

In the survey, uninsured persons with a regular source of medical care were asked, "At this place, do you pay full price for medical care or do you pay a lower amount based on what you can afford to pay?" In addition, uninsured people who did not pay a lower price at their regular source of care or who did

not have a usual source of medical care were asked, "Thinking of the area where you live, is there a place that offers affordable medical care for people without insurance?" There were no tests of the validity of responses to these questions, although validity is less of a concern as the intent of these questions was to ascertain "perceptions" of the availability of lower priced providers rather than actual availability. The development of these questions included cognitive testing to ensure that survey respondents understood the meaning of the questions and were able to provide responses to them. Also, it should be noted that perceptions of "lower priced" medical care do not necessarily imply inexpensive care, only that it is less expensive relative to what they would otherwise pay.

Follow-up questions ascertained the type of place that uninsured respondents identified as a lower priced provider, including private physician offices, hospital outpatient centers, emergency rooms, health centers or clinics, and other types of places. The analysis distinguishes between these different types of places.

Analytical Methods

The primary objective of this analysis is to identify population and health system characteristics that are associated with uninsured having a lower priced provider as their regular source of care, or being aware of a lower priced provider if they have no regular source of care. Following the logic of the survey questions, separate binomial logistic regressions are estimated for (1) the likelihood that the regular source of care is a lower priced provider (for those with a regular source of care); (2) the likelihood of being aware of a lower priced provider for uninsured with no regular source of care.

Alternative specifications of the analysis were considered, including a multinomial logistic regression that would include the entire sample of uninsured and dependent variable categories consisting of (1) no regular source of care; (2) regular source is a lower priced provider; (3) regular source is not a lower priced provider. Although such an analysis would have the advantage of including the entire sample of uninsured in a single analysis and therefore reduce concern about possible selection bias in the logistic models discussed above, the distinction between factors that affect having a regular source of care from those factors that affect having a lower priced provider as the regular source of care (the focus of the analysis) would be much less clear. Nevertheless, we tested this alternative specification and found that it had little effect on the primary results and conclusions.

For persons with a lower priced provider as their regular source of care, or who are aware of a lower priced provider in the community (as defined above), we examine population and health system factors that distinguish the type of lower priced provider. Using a multinomial logistic regression analysis, three types of providers are distinguished: physicians' offices, clinics or health centers, and hospitals.[2] This analysis combines the samples of persons with a lower priced provider as their regular source of care, and persons with no regular source of care who are aware of a lower priced provider. Analyses of the type of lower priced provider for the separate samples did not yield differences that were substantively meaningful, and the combined sample increases the statistical precision of the estimates.

All models were estimated using the *SUDAAN* software to adjust the standard errors for the effects of clustering (Shah, Barnwell, and Bieler 1996). For both the logistic and multinomial regression analyses, results are presented in terms of marginal probabilities, computed as the average of the individual predictions. For dummy variables, marginal probabilities reflect differences with the omitted category, while marginal probabilities for health system variables (continuous) are computed based on an increase of one standard deviation relative to the national mean. Tests of statistical significance are based on the underlying logit coefficients.

Independent Variables

Following the conceptual framework described above, the empirical model's independent variables include measures of safety-net capacity and proximity, indicators of the need for medical care, and predisposing factors that influence the likelihood of seeking and obtaining medical care (see Appendix table for means and standard errors of variables used in regressions).

1. Capacity of safety-net providers.

(a) Capacity of Community Health Centers (CHC). This measure is computed as the amount of CHC grant revenue per poor person within 5 miles of the survey respondent. This variable was constructed using financial information on CHCs from the Uniform Data System (UDS) maintained by the Health Resources and Services Administration, Bureau of Primary Health Care (Bureau of Primary Health Care 2004). Using information on the latitudes and longitudes of CHCs and survey respondents based on their 5-digit zip codes, we identified all CHC sites in zip code areas where the population centroid of the zip code was within 5 miles of the sample

person's zip code.[3] We then summed the grant revenues received by the CHCs within these zip code areas as an indicator of the CHC's financial capacity to provide care to uninsured people. This sum was divided by the number of poor people (i.e., less than 100 percent of poverty) within the same zip code areas based on the 2000 Census, in order to adjust the capacity measure for the potential demand on CHC services. We chose a 5-mile radius because studies have shown that people tend to receive most of their ambulatory care from nearby providers (Dranove, White, and Wu 1993; McGuirk and Porell 1984).[4]

(b) CAP grant. We identify whether there is a CAP grant recipient in the survey respondent's county of residence. Administered by the Bureau of Primary Health Care at HRSA, the purpose of CAP grants is to integrate and coordinate many of the safety-net services in local communities, and enhance linkages with other private, social service, and religious organizations involved in providing human services (Bureau of Primary Health Care 2005). Greater service integration and coordination with other entities, along with health promotion and outreach activities included in some CAP grants may increase awareness of safety-net providers. Counties are identified as having CAP grant recipients if they were awarded the grant anytime between 2000 and 2003.

(c) Safety-net hospitals. We identify safety-net hospitals within 10 miles of the survey respondent. Using data from the American Hospital Association's 2002 Annual Survey of Hospitals, we identified safety-net hospitals as all public, nonfederal, general hospitals, and those private nonprofit general hospitals that treat a high proportion of Medicaid patients (American Hospital Association 2003).[5] The 10-mile radius was selected based on prior research on travel distances to hospitals (Phibbs and Robinson 1993).

(d) Office-based physicians' charity care hours per uninsured person. A measure of total charity care hours provided by office-based physicians for each of the 60 CTS sites was obtained from the CTS Physician Survey fielded in 2001 (Diaz-Tena et al. 2003). It is limited to office-based physicians because charity care provided by physicians in hospitals or community health centers will be captured by the hospital and CHC measures of safety-net capacity. Based on the question in the survey, the variable measures total hours in the past month spent providing care for free or at reduced fee due to the

financial need of the patient, and is divided by the number of uninsured persons in the site (derived from the round three CTS household survey).

(e) Percent of poor people in respondent's 5-digit zip code. To reflect the socioeconomic context in which uninsured people live, we include a measure of the percent of persons in the respondent's zip code area with family incomes less than 100 percent of poverty, based on the 2000 Census.[6] It is included primarily as a control variable in the analysis, although it is possible that an uninsured person living in a zip code area with a high proportion of poor people will be more likely to learn about safety-net providers from neighbors than an uninsured person who lives in a neighborhood with relatively few poor people.

2. Individual-level need, enabling and predisposing factors.

The need for medical care is measured by a set of dummy variables indicating the respondent's self-reported general health status and the presence of one, or two or more chronic conditions. Affordable provider awareness may also be affected by family members' medical needs, which are represented by dummy variables for a family member in fair or poor health, with one chronic condition, or with two or more chronic conditions.

The propensity to seek medical care when a problem arises is represented by a dummy variable constructed from responses to the statement "Usually, you go to the doctor as soon as you start to feel bad." Persons are considered to have a high propensity to seek medical care if they responded "definitely true" or "mostly true" to this statement. Also included are dummy variables for age categories, gender, race and ethnicity, citizenship status of Hispanic individuals, income levels relative to poverty, marital and family status, and continuous measures of family size and years of education.

FINDINGS

Perceptions of Lower Priced Providers

The CTS data show that less than half of the uninsured (47.5 percent) either have a lower priced provider as their regular source of care, or are otherwise aware of a lower priced provider in their community (findings not shown). Of the 63 percent of uninsured persons who have a regular source of medical care, 44.6 percent report that they pay less than full price at that place, while

Table 1: Type of Lower Priced Provider

	All Uninsured with or Aware of Lower Priced Provider	*Uninsured with Lower Priced Provider as Regular Source of Care*	*No Regular Source of Care, Uninsured Aware of Lower Priced Provider*
Clinic or health center	45.2	41.0	61.2*
Physician's office	26.2	31.3	9.0*
Hospital outpatient facility	15.4	13.5	15.4
Hospital emergency department	6.2	7.8	6.9
Other place	6.6	6.3	7.5

Based on an unweighted sample size of 2,277 persons with a lower priced provider as their regular source of care or aware of a lower priced provider in the community, and a weighted population of 17,834,000.

*Difference with estimate in column 2 statistically significant at .05 level.

Source: 2003 Community Tracking Study household survey.

another 14.6 percent are aware of a lower priced provider in their community. Among those uninsured without a regular source of medical care, 27.6 percent report that they are aware of a lower priced provider in their community.

Clinics/health centers and physicians' offices are the most frequently mentioned lower priced providers. Among the uninsured who are aware of a lower priced provider or have a lower priced provider as their regular source of medical care, 45.2 percent report a clinic or health center as the lower priced provider, and 26.2 percent report a physician's office as the lower priced provider (Table 1). Only 15.4 percent report a hospital outpatient department and 6.2 percent report a hospital ED as the lower priced provider. Physicians' offices are much more likely to be identified as the lower priced provider when it is an individual's regular source of medical care, compared with providers identified by uninsured people with no regular source of medical care (31.3 versus 9.0 percent). Conversely, uninsured without a regular source of care are much more likely to mention clinics/health centers as the lower priced provider (61.2 versus 41.0 percent with a regular source of care).

Factors Associated with Having or Being Aware of Lower Priced Providers

Table 2 shows the results of the logistic regression analysis for the likelihood of uninsured persons having a lower priced provider as their regular source of medical care (column 1), as well as the likelihood of being aware of a lower priced provider for those uninsured with no regular source of medical care (column 2). The results are expressed as marginal probabilities. The results

Table 2: Marginal Probabilities for Having or Being Aware of a Lower Priced Provider among the Uninsured Based on Logistic Regression Analysis

	Uninsured with a Regular Source of Care Probability of Regular Source Being Lower Priced Provider	*Uninsured with no Regular Source of Care Probability of Being Aware of Lower Priced Provider*
Sample size	3,047	1,665
Weighted population (in thousands)	23,050	13,517
Dependent variable mean	44.6	27.6
CHC grant revenue per poor person (within 5 miles)[†] (+1 standard deviation)	6.3*	−2.3
County has CAP grant recipient[‡]	4.4	10.1*
Office-based physician charity care hours per uninsured person in site[§] (+1 standard deviation)	3.8	10.4*
Number of safety net hospitals within 10 miles[¶] (+1 standard deviation)	6.0*	2.1
Age (years)		
0–17	−0.3	−5.7
18–34	−2.8	7.1
35–44 (reference group)		
45–64	−10.5*	5.5
Male	−5.5*	2.6
White, non-Hispanic (reference group)		
Black, non-Hispanic	10.1*	6.3
Hispanic/citizen	12.7*	22.3*
Hispanic/noncitizen	12.0*	9.4
Other race/ethnicity	1.9	6.3
Income below federal poverty line (reference group)		
Between 100 and 199 percent FPL	−8.1*	−9.0*
Between 200 and 299 percent FPL	−15.2*	−14.2*

continued

Table 2: *Continued*

	Uninsured with a Regular Source of Care Probability of Regular Source Being Lower Priced Provider	*Uninsured with no Regular Source of Care Probability of Being Aware of Lower Priced Provider*
Between 300 and 399 percent FPL	−19.3*	2.3
400 percent FPL and greater	−20.3*	−7.7
Years of education (+1 year)	−0.6	0.3
Single person	−5.0	−5.0
Married couple, no kids	−1.8	−1.6
Married couple with kids (reference group)		
Single parent	−7.9	15.1
Number of persons in family (+1 person)	−4.0	−3.8
Health status of individual: fair or poor	0.2	0.8
Health status of other family member: fair or poor	4.1	−0.8
Person has one chronic condition	0.2	−5.5
Person has two or more chronic conditions	2.8	−7.9
Other family member has one chronic condition	6.8	3.8
Other family member has two or more chronic conditions	6.3	1.7
Likely to see doctor when problem arises	6.0*	10.2*
Percent of persons below poverty in zip code area[‖] (+1 standard deviation)	0.7	2.8

*$p<.05$,

**$p<.01$.

All variables derived from the 2003 Community Tracking Study household survey except for the following:

[†]Bureau of Primary Health Care, Uniform Data System, 2002.

[‡]Bureau of Primary Health Care, CAP grantee list for 2000–2003.

[§]2000–2001 Community Tracking Study physician survey.

[¶]American Hospital Association Annual Survey, 2002.

[‖]Based on 2000 Census, U.S. Census Bureau (http://www.census.gov/epcd/www/zipstats.html).

FPL, federal poverty level.

show that uninsured people are more likely to have a lower priced provider as their regular source of care, or be aware of a lower priced provider in areas with greater safety-net capacity. Uninsured were more likely to have a lower priced provider as their regular source of care in areas with higher CHC grant revenue and a greater number of safety-net hospitals. For uninsured with no regular source of care, greater awareness of lower priced providers was associated with CAP grants in the county and a higher number of charity care hours per physician.

Lower income uninsured and racial/ethnic minorities were also more likely to have or be aware of a lower priced provider. Among uninsured with a regular source of care, Hispanics (both citizens and noncitizens) were between 12 and 13 percentage points more likely to have a lower priced provider as a regular source of care compared with whites, while Hispanic citizens without a regular source of care were 22 percentage points more likely than whites to be aware of a lower priced provider. Blacks with a regular source of care were also more likely to have a lower priced provider, although the effect was statistically significant only at the 0.10 level.

As expected, higher income uninsured with a regular source of care (incomes of 200 percent of poverty or higher) were 15–20 percentage points less likely to have a lower priced provider compared with poor uninsured. There were also differences in awareness of lower priced providers among uninsured with no regular source of care, although the pattern was not as clear as for uninsured with a regular source of care.

While a higher propensity to seek care increased lower priced provider use and awareness, there were no statistically significant differences by health status. Surprisingly, uninsured in poor health, with chronic conditions, or who had family members in poor health were no more likely to have or be aware of a lower priced provider compared with uninsured in good health, regardless of whether they had a regular source of care. Additional analyses show that the lack of health status effects are not sensitive to model specification, such as the inclusion or exclusion of the family health measures or the propensity to seek care.

Factors Associated with Type of Lower Priced Provider

The results of the multinomial regression show that the probability of having a particular type of lower priced provider differs depending on certain individual and health system characteristics (Table 3). Relative to a physician's office, greater CHC capacity increases the probability of having a clinic/health center as the lower priced provider, and decreases the probability of a

Table 3: Marginal Probabilities for Type of Lower Priced Provider Based on Multinomial Regression Analysis

	Physician's Office	*Hospital-Based Facility*	*Clinic or Health Center*
CHC grant revenue per poor person (within 5 miles)† (+1 standard deviation)	3.5	−6.5*	3.0*
County has CAP grant recipient‡	−7.5	−3.6	11.1*
Office-based physician charity care hours per uninsured person in site§ (+1 standard deviation)	−5.7	−1.7	7.4*
Number of safety net hospitals within 10 miles¶ (+1 standard deviation)	−0.1	6.4*	−6.3
Age (years)			
0–17	12.6	−8.2*	−4.4*
18–34	3.3	−3.2	−0.1
Age 35–44 (reference group)			
Age 45–64	14.6	−3.0*	−11.6*
Male	−1.5	4.0	−2.5
White, non-Hispanic (reference group)			
Black, non-Hispanic	−5.8	8.6*	−2.8
Hispanic/citizen	−14.0	5.6*	8.4*
Hispanic/noncitizen	−20.4	4.1*	16.3*
Other race/ethnicity	−11.2	24.6*	−13.4
Income below federal poverty line (reference group)			
Between 100 and 199 percent FPL	6.5	1.4	−7.9
Between 200 and 299 percent FPL	12.0	−1.5	−10.4*
Between 300 and 399 percent FPL	10.0	7.6	−17.6
400 percent FPL and greater	17.7	−3.8*	−14.0*
Years of education (+1 year)	−0.2	0.3	−0.1
Single person	1.1	14.5	−15.6
Married couple, no kids	4.8	−4.0	−0.8
Married couple with kids (reference group)			
Single parent	7.9	−3.3	−4.6
Number of persons in family (+1 person)	5.4	−1.5*	−3.9*

Health status of individual = fair or poor	− 2.7	3.9	− 1.2
Health status of other family member: fair or poor	0.1	5.7	− 5.9
Person has one chronic condition	2.7	− 5.4*	2.7
Person has two or more chronic conditions	− 0.01	− 8.6	8.6
Other family member has one chronic condition	− 13.1	10.9*	2.2*
Other family member has two or more chronic conditions	− 4.2	16.5*	− 12.3
Likely to see doctor when health problem arises	11.9	− 0.1*	− 11.8*
Percent of persons below poverty in zip code area[‖] (+1 standard deviation)	− 1.4	1.1	0.3

*Difference with physician's office as the lower priced provider is statistically significant at .05 level.

Based on an unweighted sample size of 2,277 persons with a lower priced provider as their regular source of care or aware of a lower priced provider in the community, and a weighted population of 17,834,000.

All variables derived from the 2003 Community Tracking Study household survey except for the following:

[†]Bureau of Primary Health Care, Uniform Data System, 2002.

[‡]Bureau of Primary Health Care, CAP grantee list for 2000–2003.

[§]2000–2001 Community Tracking Study physician survey.

[¶]American Hospital Association Annual Survey, 2002.

[‖]U.S. Census Bureau.

FPL, federal poverty level.

hospital-based facility as the lower priced provider. A CAP grant in the county increases the probability of a clinic/health center as a lower priced provider relative to a physician's office. A higher number of safety-net hospitals increased the probability of hospital-based facilities as the lower priced provider. Contrary to expectations was that higher physician charity care increased the probability of clinic/health centers as the lower priced provider relative to physician's offices.

Greater propensity to seek medical care was strongly associated with a higher likelihood of having a physician's office as the lower priced provider and a lower likelihood of identifying a clinic/health center. Also, the effects of income and race/ethnicity varied by type of provider. Blacks were about nine percentage points more likely than whites to identify hospital-based facilities as a lower priced provider, while Hispanics were more likely than whites to identify both hospitals and clinics/health centers. Compared with poor uninsured, higher income uninsured were also generally less likely to identify hospitals and clinics/health centers and more likely to identify a physician's office as the lower priced provider. There were some statistically significant effects of individual and family health measures, although there was no clear pattern to these findings.

DISCUSSION

Previous research has documented that uninsured persons are much less likely to have a regular source of medical care compared with insured persons, which contributes to their higher risk of not getting needed medical services when a health problem arises. The results from this study show that—even among those uninsured with a regular source of care—more than half do not pay lower costs at their regular provider based on what they can afford to pay. As the cost of health care is by far the single greatest barrier to access for uninsured persons, lack of affordability may seriously diminish the effectiveness of a regular provider in facilitating entry into the medical care system for uninsured persons. Among those uninsured who lack a regular source of care, even fewer (29 percent) are aware of a lower priced medical care provider in their community. Combining these two results show that less than half (47.5 percent) of all uninsured persons use or are aware of a lower priced provider in their community.

Understanding the health system and individual characteristics that affect use and/or awareness of affordable providers increases our understanding

of the process by which uninsured individuals obtain (or do not obtain) affordable care, and is also helpful for identifying potential policy interventions to increase awareness of lower priced providers. If low awareness is primarily a function of lack of safety-net providers in the community, then policy should focus primarily on expanding capacity rather than interventions that increase awareness (e.g., outreach). While the results indicate that higher safety-net capacity is associated with increased awareness, many uninsured still do not have or are unaware of lower priced providers even when in close proximity to major safety-net providers. For example, additional descriptive analysis shows that even among uninsured who live in the same zip code area of a CHC, 40 percent do not have or are not aware of a lower priced provider.

Similarly, while poor and low-income uninsured are more likely to be aware of lower priced providers compared with higher income uninsured—as one would expect—many low-income uninsured still do not have or are unaware of a lower priced provider. Among low-income uninsured (less than 200 percent of poverty line) living within 5 miles of a CHC, 46 percent do not have or are not aware of a lower priced provider. These results suggest that expansions of safety-net providers—such as CHCs—alone will not increase access, but that outreach may also be required in some circumstances to increase awareness among uninsured medically indigent in local service areas.

CAP grants also increase awareness of lower priced providers, probably as a result of the enhanced linkages and coordination between safety-net providers and other social service organizations that the grants promote, which in turn increases the opportunities for various health care and social service providers to increase awareness of lower priced sources of care in the community. A policy focus on increasing awareness of safety-net providers among the uninsured is similar in many respects with the experiences of the expansions of Medicaid and the State Children's Health Insurance Programs during the late 1990s. Outreach efforts in the community (supported by federal, state, and local governments as well as private sources), were key to increasing enrollment among those who became eligible for the programs (Kenney et al., 2003; Selden, Hudson, and Banthin 2004).

Some specific findings also merit further discussion. Surprisingly, uninsured persons or their family members with more health problems did not have greater awareness of lower priced providers compared with uninsured with fewer health problems. As need for medical care (as reflected in measures of health status) is often the single largest determinant of health care use and access, one would have expected uninsured with health problems (i.e., more expensive health care needs) to have greater awareness of lower priced

providers. Additional analysis showed that these results were not sensitive to the specification of the health status and chronic condition variables (e.g., excluding the family health variables and measure of propensity to use care). It is possible that even with discounted prices, some providers are not viewed as "affordable" for uninsured who are frequent users and who have more complex and expensive health care needs. Also, uninsured with serious problems and chronic conditions are likely to require more intensive specialty care and services, which is typically the weakest part of the safety net.

In addition, greater physician charity care was associated with a higher likelihood of a health center/clinic as the lower priced provider relative to physician's offices, contrary to expectations. This may reflect the fact that many physicians provide their charity care as volunteers at CHCs and other free clinics rather than in their own private practice. Thus, the measure of physician charity care may reflect in part the capacity of other free clinics and health centers in the community not explicitly identified in the CHC measure.

The results also suggest that the type of provider identified as the lower priced provider varies based on the individual experiences and needs of uninsured persons. Uninsured who identify a physician's office as their lower priced provider are distinguished primarily by higher incomes and their strong propensity to use health care. These uninsured may have a long-standing relationship with a private practice physician who they regularly visit for care and have developed a considerable amount of trust, and the physician in turn is willing to discount their fees so as not to turn away patients who have depended on them for a long time. On the other hand, low-income racial/ethnic minorities are more attracted to traditional safety-net providers, such as hospital-based facilities and free clinics, perhaps because these facilities are often located closer to where these individuals live (central cities of large urban areas) and because these providers have greater experience in addressing some of the specific needs of these groups (e.g., cultural barriers and translation services).

The study did not assess the effects of lower priced providers on outcome measures of access, such as use of services and perceptions of unmet medical need. One would expect that having a lower priced provider as a regular source of medical care will result in increased service use and less unmet medical needs among the uninsured. However, examining this causal relationship with cross-sectional survey data is problematic because having a lower priced provider is likely to be endogenous with respect to outcome measures. That is, levels of service use and perceptions of difficulty getting medical care may influence whether uninsured persons become familiar with providers in the community who offer services at reduced rates. Because

process and outcome measures of access are closely related theoretically, identifying instrumental variables for a two-stage least-squares analysis is not straightforward and beyond the scope of this analysis. Future research should more explicitly examine the extent to which having a lower priced provider among the uninsured increases service use and reduces unmet medical needs.

Nevertheless, the extent to which uninsured persons perceive the availability of affordable care at their regular provider or elsewhere in the community in and of itself is an important question for policy, as fear of incurring high medical costs prevents many uninsured from even trying to get treatment for medical problems. While many policy makers and practitioners stress the importance of having a regular source of care, affordability should be one of the most important criteria for assessing the effectiveness of a regular source of care for uninsured persons. That more than half of uninsured either do not have a lower priced provider as their regular source of care or are otherwise not aware of a lower priced provider in their community should be a cause of a concern for public policy.

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NOTES

1. Four rounds of the survey have been conducted since 1996.
2. Hospital outpatient and emergency departments are combined into a single category in order to simplify the analysis, as there were no substantial differences in results when these two categories were examined separately.
3. HRSA maintains separate files on the location of each clinic, or "site," for CHCs that have multiple sites, including zip code information. In cases where the CHC has multiple sites in different zip code areas, we included only those sites that were in the target area (i.e., in zip codes that were within 5 miles of the sampled person's zip code). While site-specific revenue data are not available, this was imputed for

each site by dividing the total revenue for the CHC by the number of sites associated with the CHC.

4. Whether a 5-mile radius for providers is considered "nearby" is likely to differ considerably across communities, especially urban and rural areas. While using different radii based on community characteristics would have been difficult, controlling for whether the site was a large metropolitan site (i.e., greater than 200,000 persons), small metro site, or nonmetro site did not materially affect the results for the effects of safety net providers.
5. "High" proportion is defined as more than one standard deviation above the mean proportion of Medicaid patient days for private nonprofit general hospitals in each state. The criterion varies by state to reflect state differences in Medicaid eligibility. We assume that hospitals that treat a high proportion of Medicaid cases are more likely to accept uninsured patients than hospitals that do not treat very many Medicaid patients.
6. For more information on zip code level statistics available from the 2000 Census, see http://www.census.gov/epcd/www/zipstats.html (accessed February 2, 2006).

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SUPPLEMENTARY MATERIAL

The following supplementary material for this article is available online:

APPENDIX: Means and standard errors of independent variables used in logistic and multinomial regression analysis.