# Access to Oral Health Care: The Role of Federally Qualified Health Centers in Addressing Disparities and Expanding Access

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*Objectives.* We examined utilization, unmet need, and satisfaction with oral health services among Federally Qualified Health Center patients. We examined correlates of unmet need to guide efforts to increase access to oral health services among underserved populations.

*Methods.* Using the 2009 Health Center Patient Survey, we performed multivariate logistic regressions to examine factors associated with access to dental care at health centers, unmet need, and patient experience.

*Results.* We found no racial or ethnic disparities in access to timely oral health care among health center patients; however, uninsured patients and those whose insurance does not provide dental coverage experienced restricted access and greater unmet need. Slightly more than half of health center patients had a dental visit in the past year, but 1 in 7 reported that their most recent visit was at least 5 years ago. Among health center patients who accessed dental care at their health center, satisfaction was high.

*Conclusions.* These results underscore the critical role that health centers play in national efforts to improve oral health status and eliminate disparities in access to timely and appropriate dental services. (*Am J Public Health*. Published online ahead of print January 17, 2013: e1–e6. doi:10.2105/AJPH.2012.300846)

The "silent epidemic" of poor oral health in America was highlighted by the US Surgeon General's 2000 report, *Oral Health in America,* which also called attention to the disparities that persist in oral health status, access to care, and unmet need for dental care.[1]

A Government Accountability Office report from the same year echoed the need to address oral health disparities, noting that oral health problems are the most prevalent chronic dis ease suffered by children despite being largely preventable.[2] As with medical care, numerous studies also have found that both disease burden and access to oral health care are associated with income,[3] race and ethnicity,[4] language,[5] and insurance status and type.[6] These factors are associated with barriers to access in underserved communities such as affordability, lack of provider availability, in adequate transportation, and low health liter acy around the need for oral health care. Whereas nationally almost 60% of individuals with high incomes had a dental visit in the past year, less than 30% of low income patients (those with incomes below 200% of the federal poverty level) had a dental visit in the past year.[7]

In the 2011 brief *Advancing Oral Health in America,* the Institute of Medicine (IOM) of fered recommendations for improving access to oral health prevention and treatment ser vices through a variety of mechanisms, includ ing expanding the focus on oral health in primary care settings. Components of the strategy included training primary care pro viders to screen patients for emergent oral health issues, to assess patient risk for oral health problems, and to refer patients to dental professionals when appropriate. The IOM also called for improving oral health literacy through education efforts aimed at individuals, communities, and health care professionals. For example, community wide public educa tion campaigns were recommended to enhance awareness and knowledge about the causes and implications of oral disease and the im portance of preventive oral health services. Building the health literacy of patients and promoting healthy behaviors may increase patient activation around these issues, espe cially when coupled with guidance on how to access oral health services in the community.[8]

A subsequent IOM report, *Improving Access to Oral Health Care for Vulnerable and Underserved Populations,* suggested ways to nar row or eliminate disparities and improve the oral health status of vulnerable populations, guided by the principles that (1) oral health is essential to overall health and, thus, is an important part of comprehensive health care, and (2) any broad strategy to increase access to care should include components aimed at oral health promotion and disease prevention.[9] Building on the existing literature, recommen dations for improving access to oral health services for underserved individuals included expanding oral health care capacity by en couraging the integration of oral health services into overall health care.[10] Improving dental education and training for nondental primary care providers may facilitate such integration.[11] Financial and administrative barriers such as the lack of coverage for dental care need to be addressed, while supporting policies that en courage all professionals to practice to the full extent of their training and licensure.[12]

Federally Qualified Health Centers (health centers) play a key role in these strategies as they are uniquely positioned to increase access to oral health services in the communities experiencing the most acute access problems. Health centers provided comprehensive pri mary care to 19.5 million patients in 2010, while also serving as an affordable and conve nient access point to oral health services for underserved communities and populations. More than 3.8 million patients received dental services at health centers in 2010, and there were more than 9.2 million visits to dental providers employed in health centers.[13]

All health centers are required to provide preventive dental services either on site or by referral, and 4 out of 5 health center grantee organizations provided dental services in at least 1 of their sites in 2010, and 62.0% provided emergency dental services on site.[14] By enhancing affordability for needy patients and providing other services such as trans portation, translation, and case management, health centers address barriers to access for the most vulnerable and underserved patients in the nation. In the report on underserved populations,[9] the IOM specifically calls for health centers to utilize a variety of oral health care professionals in addition to dentists, to educate health center providers about best practices in oral health care, and to provide oral health services as part of outreach efforts beyond the walls of the health center.

The oral health objectives in Healthy People 2020 are the guideposts for evaluating efforts to improve access to timely dental care and, ultimately, oral health status.[15] The oral health goals in Healthy People 2020 seek to reduce the incidence and prevalence of dental prob lems by reducing delays and barriers to timely prevention and treatment, and 2 of the 17 oral health objectives specifically call for health centers to expand their role as a source of access to dental services. The first objective seeks to increase the proportion of health centers with on site oral health care programs from 75% in 2007 to 83% by 2020. The second objective seeks to increase the pro portion of health center patients that receive oral health services at their health center from 17.5% in 2007 to 33.3% by 2020.[16] By 2010, 80% of grantees offered on site oral health services in at least 1 site[14] and 19.5% of health center patients received oral health services at their health center,[13] demonstrating progress toward these goals.

We examined data from the 2009 Health Center Patient Survey regarding access to oral health services among health center patients. We examined utilization and unmet need for oral health care, along with satisfaction with oral health care among health center patients.

## METHODS

We weighted data from the 2009 Health Center Patient Survey to yield nationally representative estimates for patients served by health centers that receive funding from the Bureau of Primary Health Care in the Health Resources and Services Administration. Items focused on sociodemographic characteristics, health conditions, health behaviors, access to and utilization of health care services, and satisfaction with the care received. We based interview questions on instruments such as the National Health Interview Survey,[17] the Na tional Ambulatory Medical Care Survey,[18] the Medical Expenditure Panel Survey,[19] and the National Health and Nutrition Examination Survey.[20]

We used a 3 stage sampling design, with health center grantee organizations sampled first, followed by eligible sites in the second stage, and finally eligible patients served by these sites at least once in the past year in the third stage, for a total of 4562 patient in terviews between September and December 2009. We stratified the 188 grantees selected from the 2008 Uniform Data System in the first stage by funding stream, health center size, region (Northeast, Midwest, South, and West), urban or rural location, and number of sites per grantee to ensure variability in terms of those dimensions among the sites selected. We se lected a total of 432 sites in the second stage, which identified up to 3 sites per grantee. In the third stage, we selected a consecutive sample of patients from among those who entered the site and consented to participate in the survey with a total of 23 to 30 interviews completed across all sites for each grantee.

Trained field staff conducted computer assisted personal interviews lasting about 50 minutes in English or Spanish and respondents received $25 when they completed the survey. Among patients who were referred by site receptionists for an interview, 72% agreed to participate; 98% of these patients were con firmed to be eligible and completed the in terviews.

We performed analyses of the patient survey with SAS, version 9.2 (SAS Institute, Cary, NC). Because of the sampling design, which over sampled certain types of health centers and patients belonging to special populations, such as homeless individuals, we weighted the data to produce a sample that reflects the characteristics of universe of health center patients, such as age, race/ethnicity, poverty status, gender, and insurance status. We performed multivariate logistic regressions to examine factors associated with access to dental care at health centers. We adjusted models for patients' age, gender, race/ethnicity, English speaking status, health

**TABLE 1—Access to Dental Services Among Federally Qualified Health Center Patients: United States, 2009 Health Center Patient Survey**

| Variable | Frequency, No. (%) | Weighted Frequency, No. (% ±SE) |
|---|---|---|
| How long since most recent dental visit (at health center or offsite) | | |
| ≤ 6 mo | 1555 (36.42) | 5 303 244 (34.73 ±1.68) |
| > 6 mo but ≤ 1 y | 711 (16.66) | 2 456 318 (16.09 ±1.36) |
| > 1 y but ≤ 2 y | 690 (16.17) | 2 714 766 (17.78 ±1.46) |
| > 2 y but ≤ 5 y | 712 (16.69) | 2 704 444 (17.71 ±1.39) |
| > 5 y | 600 (14.06) | 2 090 452 (13.69 ±1.19) |
| Referred to other places when getting dental services | | |
| Yes | 284 (18.67) | 907 799 (15.98 ±2.45) |
| No | 1237 (81.33) | 4 771 900 (84.02 ±2.45) |
| Rating of the dental services at your health center | | |
| Excellent | 516 (52.17) | 1 405 322 (53.08 ±3.75) |
| Very good | 221 (22.35) | 492 740 (18.61 ±2.47) |
| Good | 175 (17.69) | 448 097 (16.92 ±2.73) |
| Fair | 58 (5.86) | 251 331 (9.49 ±2.70) |
| Poor | 19 (1.92) | 50 228 (1.90 ±0.77) |

status, whether the patient has a usual source of care, type of health insurance, insurance coverage of dental services, overall quality rating of health services experienced by pa tients, and whether the grantee receives spe cific funding for serving homeless patients, migrant and seasonal farmworkers, or resi dents of public housing.

## RESULTS

The patient survey asked health center patients about their most recent dental visit, whether at the health center or elsewhere. Almost half of health center patients had a dental visit within the year, and 34.7% of respondents reported a dental visit less than 6 months ago (Table 1). One in 7 health center patients reported not having accessed oral health care in more than 5 years. Almost 20% of health center patients received dental care at their health center,[14] and the patient survey found that 16.0% of all health center patients reported that their health center referred them elsewhere to get dental care.

Among patients who received oral health services at health centers, almost 3 in 4 patients rated the dental services in their health center as excellent or very good. In multivariate logistic regression, the patient characteristics found to be significantly asso ciated with a high rating of health center dental services were health status and health insurance (Table 2). Patients with good, very good, or excellent health status were 3.1 times more likely to rate their dental services highly than those whose health status was fair or poor (95% confidence interval [CI] = 1.16, 8.50; $P < .05$). Patients covered by Medicaid were less likely to report that dental services received at health centers were very good or excellent than those with private insurance (95% CI = 0.02, 0.76; $P < .05$). We saw no racial or ethnic disparities in patient satisfac tion with dental services accessed at health centers.

**TABLE 2—Descriptive Statistics and Logistic Regressions of Predictors Associated With Dental Access at Federally Qualified Health Centers: United States, 2009 Health Center Patient Survey**

| Variable | Survey Respondents, Weighted % (SE) | High Rating of Dental Services, OR (95% CI) |
|---|---|---|
| Age, y | | |
| 0 18 | 18.82 (1.49) | 1.84 (0.05, 65.67) |
| 19 59 | 72.33 (1.57) | 0.06 (0.00, 1.51) |
| ≥ 60 | 8.85 (0.76) | 1.00 (Ref) |
| Gender | | |
| Male | 40.56 (1.76) | 1.00 (Ref) |
| Female | 59.44 (1.76) | 0.57 (0.13, 2.45) |
| Race/ethnicity | | |
| Non Hispanic White | 41.69 (1.72) | 1.00 (Ref) |
| Non Hispanic Black | 21.48 (1.53) | 0.83 (0.25, 2.79) |
| Hispanic | 31.95 (1.55) | 0.78 (0.10, 6.07) |
| Other | 4.88 (0.89) | 0.25 (0.03, 2.26) |
| English speaking | | |
| English | 77.17 (1.69) | 1.00 (Ref) |
| Other | 22.83 (1.69) | 4.08 (0.59, 28.24) |
| Health status | | |
| Excellent, very good, or good | 67.66 (1.54) | 3.14* (1.16, 8.50) |
| Fair or poor | 32.34 (1.54) | 1.00 (Ref) |
| Have usual source of care | | |
| Yes | 81.69 (1.43) | 5.54 (0.80, 38.19) |
| No | 18.31 (1.43) | 1.00 (Ref) |
| Health insurance | | |
| Uninsured | 42.78 (1.91) | 3.60 (0.41, 31.83) |
| Private | 12.13 (1.10) | 1.00 (Ref) |
| Medicare | 11.98 (1.05) | 0.39 (0.03, 4.77) |
| Medicaid | 33.11 (1.87) | 0.13* (0.02, 0.76) |
| Did insurance pay for dental care | | |
| Yes | 38.4 (1.93) | 3.95 (0.94, 16.58) |
| No | 17.12 (1.32) | 1.00 (Ref) |
| Not applicable | 44.48 (1.96) | . . . |
| Rate of overall quality of services | | |
| Excellent, very good, or good | 97.71 (0.51) | 2.35 (0.22, 25.68) |
| Fair or poor | 2.29 (0.51) | 1.00 (Ref) |
| Program of funding | | |
| Community health center only | 90.15 (0.49) | 1.00 (Ref) |
| Migrant health center | 4.42 (0.27) | 1.73 (0.30, 10.17) |
| Health care for the homeless | 4.48 (0.32) | 0.48 (0.10, 2.33) |
| Public housing primary care | 0.95 (0.07) | 0.73 (0.16, 3.24) |

*Note.* CI confidence interval; OR odds ratio.
*$P < .05$.

### Access Barriers and Unmet Needs

One in 4 health center patients (24.7%) experienced delays in access to needed dental care in the past 12 months, and 29% of the respondents reported experiencing unmet needs for dental care during the past 12 months (Table 3). Top dental services that patients identified as difficult to access included oral surgery, other nonsurgical tooth repair or replacement, and routine or preventive care. Health center patients also reported difficulty accessing diagnostic tests, cosmetic dentistry, gum related treatments or examinations, or thodontia, and medications.

**TABLE 3—Barriers to Accessing Dental Services Reported by Federally Qualified Health Center Patients: United States, 2009 Health Center Patient Survey**

| Variable | Unable to Get Needed Dental Care Frequency, No. (%) | Delayed in Getting Dental Care Frequency, No. (%) |
|---|---|---|
| Type of care | | |
| Any kind of dental care | 232 (29.04) | 192 (24.68) |
| Oral surgery (including extractions, implants) | 157 (19.65) | 179 (23.01) |
| Other, nonsurgical tooth repair or replacement (crown, cap, bridge, root canal, dentures) | 152 (19.02) | 138 (17.74) |
| Routine or preventive care (including cleaning) | 89 (11.14) | 90 (11.57) |
| Cavity filling | 87 (10.89) | 79 (10.15) |
| Care or assessment of specific problem (pain, infection, injury) | 38 (4.76) | 57 (7.33) |
| Main reason | | |
| Could not afford care | 501 (61.10) | 449 (55.09) |
| Insurance company would not approve, cover, or pay for care | 134 (16.34) | 129 (15.83) |

When asked the specific reasons for diffi culty accessing dental care, health center pa tients were most likely to mention affordability and lack of insurance coverage for oral health services. More than half of respondents said that they could not afford needed oral health care and around 1 in 7 stated that his or her insurance company would not approve, cover, or pay for needed oral health services in the past 12 months. Dental services are not always covered by insurers and even patients with insurance that does cover oral health services might face high cost sharing. Other reasons cited by a small percentage of respondents included transportation issues, fear of visiting a dentist, and lack of time to seek dental services.

### Patient Characteristics Associated With Access Problems

We found no racial/ethnic disparities in terms of ability to access dental services among health center patients, but insurance coverage of dental care, health status, and gender were found in logistic regression models to be signif icantly associated with inability to access needed oral health services in the past 12 months. Table 4 shows that difficulty accessing care was less common among health center patients whose insurance pays for dental care (95% CI = 0.09, 0.50; $P < .05$). Patients who rated their health status as good or better were less likely to report experiencing access barriers to dental care than were those who reported their health status to be fair or poor (95% CI = 0.28, 0.97; $P < .05$). Women were 2.30 times more likely to report unmet need for dental services than men (95% CI = 1.12, 4.74; $P < .05$).

We saw a similar pattern for delays in access to needed dental care, except the association with health status. Patients whose insurance covered dental care were less likely to report delays in accessing oral health services than were those whose insurance did not cover dental care (95% CI = 0.09, 0.50; $P < .001$). Women were 2.44 times more likely to report a delay in accessing dental services than were men (95% CI = 1.24, 4.80; $P < .01$). We detected no disparities on the basis of race and ethnicity in likelihood of experiencing a delay in receiving needed dental services.

## DISCUSSION

We examined access to oral health services among health center patients, as well as patient experience with care and the reasons behind unmet need for dental care. Slightly more than half of health center patients had a dental visit in the past year, but 1 in 7 reported that their most recent visit was at least 5 years ago. Among health center patients who accessed dental care at their health center, satisfaction was high. In contrast with previous research showing disparities in access to oral health care, we found no racial or ethnic disparities in access to timely oral health care among health center patients. However, women and those whose insurance does not provide dental cov erage experienced restricted access and greater unmet need. These results underscore the critical role that health centers play in national efforts to improve oral health status and eliminate disparities because affordability is a factor in unmet need.

Consistent with other studies, cost related barriers for health center patients can inhibit access to timely preventive and restorative oral health services. Almost 1 in 3 health center patients reported that they were unable to get needed dental care in the past year, primarily because of affordability and lack of insurance coverage. This study adds to the extant litera ture by examining access to oral health care and unmet needs among health center patients in particular, which has not been addressed by previous studies, and by providing information about the correlates of unmet needs among populations and communities served by health centers.

Limitations of this study include possible selection bias in the sampling process and the use of self report for the 2009 Health Center Patient Survey. Similar to other surveys, several factors including recall and social desirability bias might have an impact on the reliability of self reported information on oral health status, access, and satisfaction. The data from the Uniform Data System are not subject to selec tion bias as every grantee organization submits the Uniform Data System annually, aggregated at the grantee level. However, there is no information on how many of each grantee's sites provide on site oral health services and how dental staffing, patients, and encounters are distributed across the grantee's sites.

Future research might investigate the char acteristics and mechanisms that enable health centers to address racial and ethnic disparities in access to care, as well as provide evidence to guide the design and implementation of pro grams such as outreach, patient education campaigns, and innovative ways to activate patients around oral health issues. Research on the oral health needs and utilization patterns of health center patients with chronic condi tions that are frequently associated with oral health comorbidities would help increase un derstanding of the unique needs of individuals

**TABLE 4—Logistic Regressions of Predictors Associated With Dental Access at Federally Qualified Health Centers: United States, 2009 Health Center Patient Survey**

| Variable | Unable to Get Dental Services, OR (95% CI) | Delayed in Getting Dental Services, OR (95% CI) |
|---|---|---|
| Age, y | | |
| 0 18 | 1.97 (0.46, 8.46) | 0.82 (0.18, 3.65) |
| 19 59 | 2.58 (0.90, 7.33) | 1.64 (0.70, 3.85) |
| ≥ 60 (Ref) | 1.00 | 1.00 |
| Gender | | |
| Male (Ref) | 1.00 | 1.00 |
| Female | 2.30* (1.12, 4.74) | 2.44** (1.24, 4.80) |
| Race/ethnicity | | |
| Non Hispanic White (Ref) | 1.00 | 1.00 |
| Non Hispanic Black | 0.58 (0.23, 1.43) | 0.75 (0.31, 1.82) |
| Hispanic | 1.10 (0.40, 3.04) | 1.10 (0.43, 2.85) |
| Other | 0.54 (0.21, 1.41) | 0.34 (0.09, 1.20) |
| English speaking | | |
| English (Ref) | 1.00 | 1.00 |
| Other | 0.60 (0.21, 1.73) | 0.54 (0.19, 1.54) |
| Health status | | |
| Excellent, very good, or good | 0.52* (0.28, 0.97) | 0.69 (0.38, 1.27) |
| Fair or poor (Ref) | 1.00 | 1.00 |
| Have usual source of care | | |
| Yes | 1.35 (0.56, 3.23) | 0.83 (0.30, 2.29) |
| No (Ref) | 1.00 | 1.00 |
| Health insurance | | |
| Uninsured | 1.44 (0.42, 4.97) | 0.77 (0.26, 2.33) |
| Private (Ref) | 1.00 | 1.00 |
| Medicare | 3.07 (0.67, 13.96) | 1.06 (0.31, 3.60) |
| Medicaid | 2.04 (0.62, 6.75) | 1.54 (0.51, 4.61) |
| Did insurance pay for dental care | | |
| Yes | 0.21*** (0.09, 0.50) | 0.21*** (0.09, 0.49) |
| No (Ref) | 1.00 | 1.00 |
| Not applicable | . . . | . . . |
| Rate of overall quality of services | | |
| Excellent, very good, or good | 0.57 (0.24, 1.36) | 0.46 (0.20, 1.09) |
| Fair or poor (Ref) | 1.00 | 1.00 |
| Program of funding | | |
| Community health center only (Ref) | 1.00 | 1.00 |
| Migrant health center | 0.59 (0.26, 1.34) | 0.94 (0.42, 2.14) |
| Health care for the homeless | 1.90 (0.92, 3.95) | 1.92 (0.97, 3.80) |
| Public housing primary care | 0.71 (0.38, 1.36) | 0.59 (0.32, 1.11) |

*Note.* CI confidence interval; OR odds ratio.
*$P < .05$; **$P < .01$; ***$P < .001$.

with diabetes, HIV/AIDS, and substance use disorders.

Evaluating the effectiveness of interventions such as training primary care providers to screen and refer for oral health issues is another possible avenue for future work aimed at exploring how to further incorporate oral health into the bundle of comprehensive services provided by the patient's health care home, otherwise known as the patient centered medical home. The development of consensus around additional performance measures for the delivery of oral health care, coupled with additional research on best practices in terms of clinical protocols, workflow, and utilizing var ied types of staff such as dental aides, assis tants, and technicians will further empower health centers and other providers to respond to the vision of the IOM.

This study shows that health centers play a role in attenuating racial and ethnic dispar ities while serving as critical access portals to affordable, culturally competent oral health services in underserved communities. Oral health services offered in health centers are vital components of the strategy for meeting the Healthy People 2020 oral health objectives and fulfilling the IOM's vision of a public health infrastructure that increases access to afford able, timely, and culturally competent oral health care. Already, 80% of health center organizations provide oral health services in at least 1 site and future expansions will increase the number of access points for oral health services. Because they are positioned to serve patient populations that are likely to be expe riencing unmet needs for oral health services, health centers are a cornerstone of the national strategy to address the "silent epidemic" of unmet need for oral health care.

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***Note.*** *The views expressed in this publication are solely the opinions of the authors and do not necessarily reflect the official policies of the US Department of Health and Human Services or the Health Resources and Services Administration, nor does mention of the department or agency names imply endorsement by the US Government.*

## Contributors

L. Shi completed the analyses. E. Jones led the writing. A. S. Hayashi, Q. Ngo Metzger, C. Daly, and R. Sharma assisted with the writing and interpretation of the analyses. Q. Ngo Metzger supervised the study.

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## Human Participant Protection

Institutional review board approval was obtained from RTI International, the organization in charge of data collection, and local institutional review board or other committee approvals were obtained where necessary.

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