# Racial/Ethnic Disparities in the Acceptance of Medicaid Patients in Dental Practices

**Christopher Okunseri, BDS, MSc; Ruta Bajorunaite, PhD; Albert Abena, DDS; Karl Self, DDS, MBA; Anthony M. Iacopino, DMD, PhD; Glenn Flores, MD**

**Abstract**

***Objectives:*** *Medicaid enrollees disproportionately experience dental disease and difficulties accessing needed dental care. However, little has been documented on the factors associated with the acceptance of new Medicaid patients by dentists, and particularly whether minority dentists are more likely to accept new Medicaid patients. We therefore examined the factors associated with the acceptance of new Medicaid patients by dentists.* ***Methods:*** *We analyzed 2001 data from the Wisconsin Dentist Workforce Survey administered by the Wisconsin Division of Health Care Financing, Bureau of Health Information. We used descriptive statistics and logistic regression analysis to examine the factors associated with the outcome variable.* ***Results:*** *Ninety-four percent of Wisconsin licensed dentists (*n *= 4,301) responded to the 2001 survey. A significantly higher likelihood of accepting new Medicaid patients was found for racial/ethnic minority dentists (35 versus 19 percent of White dentists) and dentists practicing in large practices (31 versus 16 percent for those in smaller practices). In the multivariable analysis, minority dentists [odds ratio (OR) = 2.06, 95 percent confidence interval (CI) = 1.30, 3.25] and dentists in practices with >3 dentists (OR = 2.25, 95 percent CI = 1.69, 3.00) had significantly greater odds of accepting new Medicaid patients.* ***Conclusions:*** *Racial/ethnic minority dentists are twice as likely as White dentists to accept new Medicaid patients. Dentists in larger practices also are significantly more likely than those in smaller practices to accept new Medicaid patients. These findings suggest that increasing dental workforce diversity to match the diversity of the general US population can potentially improve access to dental care for poor and minority Americans, and may serve as an important force in reducing disparities in dental care.*

*Key Words: Medicaid, dental workforce, minority groups, poverty, access to care*

## Introduction

Medicaid-insured patients and racial/ethnic minority groups are disproportionately affected by dental disease and have difficulty accessing needed care (1). Only one in five US children enrolled in Medicaid receives preventive dental services, and very few Medicaid-insured children have all of their dental care needs met (2). Even when Medicaid enrollees receive dental care, studies document that they generally are less satisfied with care compared with privately insured patients (1). Access to dental care for the majority of Medicaid-insured patients is a significant public health problem. The Medicaid program is designed to facilitate easy access to health care services (including dental services for those eligible) and eliminate the financial barrier for health care services experienced by low-income families (3); however, this is not happening.

Medicaid is the largest program in the federal safety net of public assistance, covering millions of people classified as poor based on federal poverty guidelines, including the disabled, elderly, blind, pregnant women, and children and their caretakers (4). Medicaid provides dental coverage for millions of low-income (5) and racial/ethnic minority children (6), and minorities comprise a disproportionately high proportion of those covered by Medicaid. Studies on the dental Medicaid program have focused primarily on the dental disease burden of enrollees, access to care, and factors affecting dentist participation in the program (3,7-10). To date, however, no study has specifically evaluated minority dentist participation in the Medicaid program, and whether the race/ethnicity of dentists is associated with the acceptance of Medicaid enrollees. The aim of this study, therefore, was to identify the factors associated with acceptance of new Medicaid patients, and to determine specifically whether minority dentists are more likely to accept new Medicaid patients.

## Methods

**Data Source.** The data source was the Wisconsin Dentist Workforce Survey (WDWS), conducted in 2001 (11). The WDWS questionnaire was developed from previous US dental workforce surveys, with input from a variety of stakeholders and sources, including the Wisconsin Division of

Send correspondence and reprint requests to Christopher Okunseri, BDS, MSc, DDPHRCSE, FFDRCSI, Department of Clinical Services Room 356, Marquette University School of Dentistry, P.O. Box 1881 Milwaukee, WI 53201-1881. Tel.: (414) 288-6524; Fax: (414) 288-3586; e-mail: christopher.okunseri@marquette.edu. Christopher Okunseri and Albert Abena are with the Department of Clinical Services, Marquette University School of Dentistry, Milwaukee, WI. Ruta Bajorunaite is with the Department of Mathematics, Statistics, and Computer Science, Marquette University, Milwaukee, WI. Karl Self is with the Department of Primary Care, University of Minnesota School of Dentistry, Minneapolis, MN. Anthony M. Iacopino is with the Department of Restorative Dentistry, University of Manitoba Faculty of Dentistry, Winnipeg, Manitoba. Glenn Flores is with the Division of General Pediatrics, Department of Pediatrics, UT Southwestern Medical Center, Dallas, TX, and the Children's Medical Center, Dallas, TX. Manuscript received: 7/3/07; accepted for publication: 9/15/07.


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Health Care Financing, the Wisconsin Division of Public Health, the Wisconsin Dental Association, the Southwest Wisconsin Area Health Education Center, the Wisconsin Primary Care Association, the Madison Area Technical College Health Occupations Program, and the Marquette University School of Dentistry (11). The WDWS was completed by dentists online and via phone as part of their license-renewal process. Instructions on how to access the survey online and a toll-free number for those wishing to complete the survey by telephone were mailed with the license-renewal notices to all Wisconsin dentists by the Department of Regulation and Licensing.

Data collected in the WDWS included dentists' educational characteristics (type of dental degree, year granted, and granting institution), practice information (current place of dental practice and total number of hours spent on patient care and consultation, teaching, research, administration, and other), dental hygienist characteristics, patient care information (acceptance of new patients, serves Medicaid patients, acceptance of new Medicaid patients, and do you routinely provide pro bono care), and race/ethnicity. Data on acceptance of new patients, service to Medicaid patients, acceptance of new Medicaid patients, routine provision of pro bono care, and dentists' race/ethnicity, year dental degree was granted, location of dental degree-granting institution, and practice size and type were included in the analyses because of their relevance to the study outcome variables. Although providing data on race/ethnicity was optional in the WDWS, the proportion of those who responded to this particular question was similar to the anecdotal information available on the proportion of minority dentists in the state. Government practices were categorized as Veteran Affairs (VA) hospitals or military hospitals, state or local government facilities, and federally funded facilities (including tribal health facilities, community health facilities, and migrant health centers). Nongovernment practices included individual proprietors of an incorporated dental practice, partners in group practices, and shareholders in an incorporated dental practice.

**Statistical Analysis.** Chi-square tests and Fisher's exact tests (for low cell counts) were used to assess the demographic differences between survey respondents. Race/ethnicity was dichotomized as White versus minority, based on respondent self-identification, with minority defined as African-American, Latino, Native American, or Asian/Pacific Islander. Multivariable logistic regression analyses were performed to examine the factors associated with accepting new Medicaid patients (the dependent variable); independent variables analyzed included race/ethnicity, practice size [small (1 to 3 dentists in practice) versus large (>3 dentists in practice)], and practice type (government versus nongovernment). Although there was a bivariate association between dentists that received their degrees abroad and the acceptance of new Medicaid enrollees, this variable could not be entered in the multivariable models because of the exceedingly small sample size. A backward elimination selection procedure was employed in the multivariable analyses; only variables that were significant in bivariate analyses were included as independent variables in the final multivariable model. A statistical significance (alpha) level of 0.05 was used throughout, and SAS version 9.1 (SAS Institute, Cary, NC) was used to perform all statistical analyses.

## Results

**Dental Workforce Characteristics.** In 2001, there were 4,563 licensed dentists in Wisconsin, of whom 4,301 (94 percent) responded to the WDWS. Race/ethnicity was reported by 2,078 dentists, including 98 who were racial/ethnic minorities (Table 1). Racial/ethnic minority dentists constituted 5 percent of the dental workforce. White dentists report accepting significantly fewer new patients in general (Table 1). White and racial/ethnic minority dentists significantly differed in their acceptance rates of new Medicaid patients as well, with over one-third of minority dentists but fewer than one in five White dentists accepting new Medicaid patients. Minority dentists also report serving more Medicaid patients (i.e., care for both established and new Medicaid patients). Comparatively, White dentists received their dental degrees earlier, from US schools, and practice in smaller practices, whereas racial/ethnic minority dentists generally received their dental degrees later, from non-US dental schools, and practice in larger and government clinics. Slightly less than half of the White dentists reported that they provide charity work.

**Bivariate Analyses.** Minority dentists had twice the unadjusted odds of accepting new Medicaid patients (Table 2). Dentists who received their degree abroad had over nine times the unadjusted odds of accepting new Medicaid patients, and large-practices dentists and government-clinic dentists were also more likely to accept new Medicaid patients. Dental school graduation year was not found to be significantly associated with accepting new Medicaid patients, except among those with unknown data. Dentists who provide charity work and those who do not had about equal unadjusted odds of accepting new Medicaid patients.

**Multivariable Analyses.** Compared with White dentists, minority dentists had more than double the adjusted odds of accepting new Medicaid patients (Table 3). Dentists in government practices were five times more likely to accept new Medicaid patients as those in nongovernment practices, and those in large practices were more than twice as likely as those in small practices to accept new Medicaid patients. Dentists who reportedly do charity work were slightly more likely to accept new Medicaid patients.

## Discussion

Racial/ethnic minority dentists are significantly more likely than White dentists to accept new Medicaid

**Table 1**
**Selected Characteristics of Wisconsin Dentists in 2001**

| Characteristic | % of dentists who are | | |
|---|---|---|---|
| | Whites ($n = 1{,}980$) | Minorities ($n = 98$) | *P* |
| Accepts new patients | | | |
| Yes | 93 | 94 | 0.006 |
| No | 6 | 2 | |
| Unknown | 1 | 4 | |
| Accepts new Medicaid patients | | | |
| Yes | 19 | 35 | <0.001 |
| No | 78 | 60 | |
| Unknown | 3 | 5 | |
| Serves Medicaid patients | | | |
| Yes | 41 | 52 | 0.009 |
| No | 57 | 43 | |
| Unknown | 2 | 5 | |
| Year dental degree was granted | | | |
| Prior to 1980 | 36 | 22 | <0.001 |
| 1980-99 | 28 | 43 | |
| 2000 or later | 1 | 4 | |
| Unknown | 35 | 31 | |
| Location of dental degree-granting institution | | | |
| United States | 99.5 | 90 | <0.001* |
| Abroad | 0.2 | 9 | |
| Unknown | 0.3 | 1 | |
| Practice size | | | |
| Small (1-3 dentists) | 72 | 58 | <0.001 |
| Large (>3 dentists) | 14 | 32 | |
| Unknown | 14 | 10 | |
| Practice type | | | |
| Nongovernment | 82 | 83 | 0.032 |
| Government | 1 | 4 | |
| Unknown | 17 | 13 | |
| Provides charity work | | | |
| Yes | 47 | 26 | <0.001 |
| No | 47 | 64 | |
| Unknown | 6 | 10 | |

* Fisher's exact test.

patients. To our knowledge, this is the first study to demonstrate this disparity in the Medicaid population. This finding is consistent with a small number of studies that examined whether minority providers of medical care are, in general, more likely to treat socially marginalized patients (12-15). These studies document that minority physicians are significantly more likely than White physicians to care for minorities and the poor, practice in urban communities designated as physician-shortage areas, and practice in areas where access to care is limited (12-15). In dentistry, one study showed that Black dentists in the state of Texas serve a higher percentage of Black and poor patients than White dentists (15). A survey conducted by the American Dental Education Association (ADEA) of graduating students in 2004 revealed that minorities were more likely than Whites to continue as primary care dental providers in underserved communities (16). These studies, together with our findings, indicate the importance of workforce diversity to dental care and the critical impact dental workforce diversity may have on access to care for minorities, the poor, and underserved populations (defined as individuals who are low-income, racial/ethnic minority, or have impaired access to dental care) who are Medicaid-insured enrollees.

The study findings documented that racial/ethnic minority dentists comprised only 5 percent of Wisconsin dentists in 2001. Indeed, recent American Dental Association data reveal that in 2004, 13 percent of active dentists in the United States were racial/ethnic minorities (17). Importantly, in Wisconsin, minorities comprised 12 percent of the population in 2000 (18). This gap in the percentage of minority dentists in Wisconsin is consistent with national data. For example, racial and ethnic minorities currently comprise approximately 30 percent of the total US population (19), but only 13 percent of the dental workforce in the United States (17). This disparity also exists in dental school graduation rates. Between 1995 and 2004, the proportion of Black US dental graduates decreased from 5.7 to 5.4 percent, and the Latino dental school graduation rate remained at 5.8 percent, whereas the dental school graduation rate for Whites increased substantially over the same period (20). Black and Latino dentists have been shown to be more likely to treat patients whose annual income is less that $15,000 (21). Additionally, recent research documents that Black patients comprise 62 percent of the patients seen by Black dentists, and White patients comprise 77 percent of the patients seen by White dentists (21).

Studies suggest that racial/ethnic differences between providers and patients can influence patients' willingness to seek and receive care (15,21,22). It has been suggested that such racial/ethnic differences can also result in linguistic and cultural barriers to care, provider bias, poor quality care, low utilization of care, and inadequate access to care, all of which, in turn, can perpetuate oral health disparities (23,24). Addressing dental workforce diversity and access to dental care for minorities has increasingly become an important priority, given that the minority population of the United States recently reached 101 million (25), and is estimated to comprise half of the US population by 2050 (26).

**Table 2**
**Bivariate Analyses of Factors Associated with Acceptance of New Medicaid Patients**

| Characteristic | Proportion of dentists accepting new Medicaid patients: % | Crude odds ratio (95% confidence interval) | *P* |
|---|---|---|---|
| Race/ethnicity | | | |
| White | 19 | Referent | <0.001 |
| Minorities | 35 | **2.35 (1.52, 3.64)** | |
| Year degree was granted | | | |
| Prior to 1980 | 22 | Referent | 0.223 |
| 1980-99 | 21 | 0.94 (0.72, 1.23) | |
| 2000 or later | 16 | 0.65 (0.19, 2.26) | |
| Unknown | 17 | **0.76 (0.58, 0.98)** | |
| Location of degree-granting institution | | | |
| United States | 20 | Referent | 0.001* |
| Abroad | 58 | **9.20 (2.37, 35.71)** | |
| Unknown | 14 | 0.66 (0.08, 5.47) | |
| Practice size | | | |
| Small | 16 | Referent | <0.001 |
| Large | 31 | **2.41 (1.82, 3.20)** | |
| Unknown | 26 | **1.93 (1.43, 2.61)** | |
| Practice type | | | |
| Nongovernment | 19 | Referent | <0.001 |
| Government | 44 | **5.11 (2.19, 11.93)** | |
| Unknown | 24 | **1.46 (1.11, 1.93)** | |
| Charity work | | | |
| No | 19 | Referent | <0.001 |
| Yes | 19 | 1.02 (0.82, 1.28) | |
| Unknown | 27 | **2.23 (1.41, 3.50)** | |

* Fisher's exact test.

**Table 3**
**Multivariable Analysis of Factors Associated with Dentists Accepting New Medicaid Patients in Wisconsin**

| Independent variable | Odds ratio (95% confidence interval) of accepting new Medicaid patients | *P* |
|---|---|---|
| Race/ethnicity (referent: White) | | |
| Minority (non-White) | 2.06 (1.30, 3.25) | 0.002 |
| Practice type (referent: nongovernment) | | |
| Government | 5.00 (2.07, 12.08) | 0.002 |
| Unknown | 1.06 (0.70, 1.61) | |
| Practice size (referent: small) | | |
| Large (>3 dentists) | 2.25 (1.69, 3.00) | <0.001 |
| Unknown | 1.93 (1.25, 2.99) | |
| Charity work (referent: no) | | |
| Yes | 1.11 (0.88, 1.40) | 0.002 |
| Unknown | 2.31 (1.45, 3.68) | |

Government practices and large practices were found to be significantly more likely to accept new Medicaid patients. Government practices were five times more likely to accept new Medicaid patients, indicating that community and migrant health centers, tribal health facilities, VA and military hospitals, and other state, local, and federal government facilities are essential to providing access to dental care for Medicaid patients. This suggests that greater dental care access for Medicaid patients could be secured by increasing the number of governmental facilities providing dental care. The available data do not permit identification of the reasons why larger practices are more likely to accept new Medicaid patients, but one can speculate that, by virtue of their greater patient volumes, they can better absorb the perceived shortfalls of Medicaid reimbursement, a common complaint by private dental practitioners. In this regard, increasing the acceptance of new Medicaid patients by smaller practices may require increased dental Medicaid reimbursement, reduced Medicaid administrative paperwork, a decrease in the number of dental procedures requiring Medicaid pre-authorization, expanding the reimbursable functions and procedures for dental hygienists and assistants, and providing additional incentives for dentists who exceed a reasonable threshold of Medicaid dental patients. These suggested steps for improving access to dental care for Medicaid-insured patients are consistent with studies documenting that low reimbursement and administrative and bureaucratic burdens are barriers to dental care access for Medicaid patients (3,7).

Given the study findings, a key unanswered question is what can be done to increase dental workforce diversity? A critical step would be the enhanced recruitment and retention of minorities by dental schools. A recent ADEA symposium identified three promising approaches: a) collaborative recruitment programs based on groups of regional schools; b) workshops that focus on the effective operation of admissions committees; and c) summer enrichment programs for college students interested in dentistry and medicine (27). More rigorous evaluation research is needed regarding the effectiveness of these and other diversity interventions. In addition, dental schools should continue to promote, or introduce, rotations that provide dental students with greater exposure to the rewarding and practical aspects of providing care to minority, low-income, publicly insured, and other underserved populations.

Certain study limitations and strengths should be noted. First, responding to the WDWS question on dentists' race/ethnicity was optional, so the nonresponse bias may have affected the findings. However, the study findings are comparable with prior and current data on the number of minority dentists in Wisconsin. The data are from 2001, so the situation may have changed since then, but these were the most complete and recent data available at the time of the analyses. Another limitation is that the WDWS data on dentists' age, gender, and practice location (urban, rural, or suburban) were not available, so the association of these variables with the acceptance of new Medicaid patients could not be analyzed. Despite these limitations, the study findings are considered generalizable to the entire Wisconsin dental workforce because of the rigorous sampling method used and the response rate of 94 percent.

In conclusion, minority dentists are twice as likely as White dentists to accept new Medicaid patients. Large dental practices are also more likely than smaller practices to accept new Medicaid patients. These findings suggest that increasing dental workforce diversity to match the diversity of the general US population could substantially increase access to dental care for poor and racial/ethnic minority Americans, and could serve as a potent force in reducing or eliminating dental care disparities.

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