Dentists Who Participate in Medicaid: Who They Are, Where They Locate, How They Practice

September 15, 2022

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Most dental offices’ patient volume nearing normal, data suggests

The New York Times
How’s the Economy Doing? Watch the Dentists

Why Wisconsin and the nation have a dental hygienist shortage

Why you don’t need dental insurance to go to the dentist
Today

**Data and Trends**

**Dentists Who Participate in Medicaid: Who They Are, Where They Locate, How They Practice**

Kamyar Naseh, Chelsea Fussell, and Marko Vujcic

**Abstract**

Low utilization of dental services among low-income individuals and racial minorities reflects pervasive inequities in U.S. health care. There is limited research determining common characteristics among dentists who participate in Medicaid or the Children’s Health Insurance Program. Using detailed Medicaid claims data and a provider database, we examined the characteristics among dentists with 100 or more pediatric Medicaid patients, 40% practice in high-poverty areas, 95% practice in rural areas, and 29% work in large practices (11 or more dentists). Among these with 100 or more Medicaid patients, 10% practice in high-poverty areas, 9% practice in rural areas, and 17% work in large practices. We found that dentists practicing in high-poverty areas were more likely to provide care in rural areas, regardless of the median income or racial and ethnic profiles of the community.

**Keywords**

Dentists, Medicaid, poverty areas, ethnic and racial minorities, health service accessibility

**Introduction**

Oral health is an essential component of overall health, yet low-income populations experience significant barriers to dental care compared with higher-income individuals. In fact, compared with medical care services, prescription drug services, mental health care, and vision care services, more people reported not getting needed dental services due to cost, irrespective of age and income (Vujcic et al., 2014). Racial disparities in dental care access have narrowed over the last decades for children, but Black and Hispanic children are still less likely to visit a dentist than White children (American Dental Association, 2023). However, lack of research and the level of Medicaid reimbursement (Buchmueller et al., 2013) are not always reasons why there are disparities in dental care access in Medicaid populations. For example, in North Carolina, 90% of publicly insured children live within a 15-min travel time of a dentist who participates in Medicaid or the Children’s Health Insurance Program (CHIP), and 96% of the eligible population lives within a 30-min travel time of any dentist (Vujcic, 2010). Rather, for a given supply of dentists, one should examine how intensively they treat publicly insured populations and the factors associated with dental participation in Medicaid. This sheds light on what factors are likely to expand the provider network serving low-income populations. Hence, it is important for policymakers to understand provider, practice, and local area characteristics that influence dental participation in Medicaid, including the role of private and public practice and ethnicity. This helps policymakers devise strategies to attract more dentists to treat publicly insured patients, particularly racial and ethnic minorities and other populations that are traditionally underserved.

There is evidence that physicians primary care practices that were most likely to have substantial Medicaid revenue were affiliated with large hospital systems (U.S. Department of Health and Human Services, 2014). In a study, the level of Medicaid reimbursement was a modest factor in dentist participation in Medicaid (Buchmueller et al., 2013). Other measures examining characteristics among Medicaid dentists have been single-site studies that were

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Recent HPI Work

Dentist Participation in Medicaid or CHIP

43% OF U.S. DENTISTS participate in Medicaid or CHIP for child dental services

63% AFFILIATED WITH A DSO

41% NOT AFFILIATED WITH A DSO

49% FEMALE DENTISTS

41% MALE DENTISTS

63% 51% 50% 39% 53%

Black Hispanic Asian White Other Race

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Recent HPI Work

HPI obtained Medicaid claims data from all states via TMSIS. We merge with our provider data to measure Medicaid patient volume for individual dentists.
Recent HPI Work

In VT, WY, MI, 71% of dentists were enrolled as providers in their respective Medicaid programs.

However, the level of patient volume varied drastically.
What this Paper Contributes

- We set out to measure which dentists participate most intensively as Medicaid and CHIP providers.

- We rely on detailed Medicaid and CHIP claims data. The universe. Not a sample.

- We merge claims data with individual dentist data that contains dentist demographics, practice location data, and other practice characteristics.

- We merge the community characteristics of the population in the practice area.

- Our analysis covers all states except: Arkansas, DC, Indiana, Nebraska, Nevada, Pennsylvania, South Dakota and West Virginia (due to high # of missing NPI values).
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Professor, Department of Family Medicine, Director of Center for Health Workforce Studies University of Washington
Data

- 2017 Medicaid/CHIP claims data from T-MSIS (Numerator)
  - A depository of medical inpatient, medical outpatient, pharmacy and dental de-identified claims maintained by CMS.
  - All states required to submit annual claims to T-MSIS.
  - Contains a linkable individual provider NPI number.
  - For children ages 0-20, we extracted all dental claims with a CDT Code (D0100-D9999).
  - For each NPI number, we enumerated the number of unique patients seen in 2017.

- 2017 ADA office database (Denominator)
  - Includes linkable individual provider NPI number.
  - Maps dentists into specific office locations, and those locations are tagged as DSOs, FQHCs. Contains FIPS and ZIP codes which we link to Census data.
  - Contains dentist demographic information (Age, Race, Gender, Specialty).

- Analysis limited to GP and Pediatric dentists since these dentists more likely to treat children.
Methods

• Outcome variable: Number of unique patients a dentist sees in calendar year

• Independent Variables:
  • Individual dentist characteristics: age, gender, race/ethnicity, specialty
  • Practice characteristics: DSO status, FQHC status, practice size, urban/rural
  • Local area characteristics: Poverty rate, median household income, dentists per capita, Racial/Ethnic mix (i.e. is it a majority non-white zip code).
  • State fixed-effects to control for differences across states.

• We estimated a hurdle model
  • We are interested in modeling the expected number of Medicaid patients a dentist treats conditional on independent variables.
  • Disentangles the participation decision (Medicaid: Yes/No) and from the decision of how much to participate (How many patients to treat conditional on participating).
33% of dentists saw at least one Medicaid patient
### Expected Number of Medicaid Patients Treated

<table>
<thead>
<tr>
<th>Race/Ethnicity</th>
<th>Dentists Per 100K Population</th>
</tr>
</thead>
<tbody>
<tr>
<td>White</td>
<td>114</td>
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<tr>
<td>Hispanic</td>
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<td>Black</td>
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<tr>
<td>Asian</td>
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<td>Other</td>
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<table>
<thead>
<tr>
<th>Median Household Income</th>
<th>Dentists Per 100K Population</th>
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<tbody>
<tr>
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<tr>
<td>$60,000</td>
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<table>
<thead>
<tr>
<th>Zip Code</th>
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<tr>
<td>Located in Majority Non-White Zip Code</td>
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<tr>
<td>Located in Majority White Zip Code</td>
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<tr>
<td>RURAL DENTIST</td>
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<tr>
<th>Practice Size</th>
<th>Dentists Per 100K Population</th>
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<tr>
<td>1-2 Dentists</td>
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<tr>
<td>3-10 Dentists</td>
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<tr>
<td>11 or More Dentists</td>
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<table>
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<th>Dentist Age</th>
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<tr>
<td>AGE 21-34</td>
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<td>AGE 35-49</td>
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<tr>
<td>AGE 50-64</td>
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<table>
<thead>
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<th>Sex</th>
<th>Dentists Per 100K Population</th>
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<tbody>
<tr>
<td>Female</td>
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<tr>
<td>Male</td>
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<th>FQHC</th>
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<tr>
<td>FQHC DENTIST</td>
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<tr>
<th>Povet</th>
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<tr>
<td>Not in Poverty Zip Code</td>
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<tr>
<td>In Poverty Zip Code</td>
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<table>
<thead>
<tr>
<th>Rural</th>
<th>Dentists Per 100K Population</th>
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<tbody>
<tr>
<td>Non-Rural DENTIST</td>
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<tr>
<td>Rural DENTIST</td>
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<thead>
<tr>
<th>Zip Code Location</th>
<th>Dentists Per 100K Population</th>
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<tr>
<td>Majority White Zip Code</td>
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<tr>
<td>Majority Non-White Zip Code</td>
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<td>AGE 50-64</td>
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Dentist per 10K Population

Expected Number of Medicaid Patients

Dentists Per 100K Population

<table>
<thead>
<tr>
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<tbody>
<tr>
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<td>90</td>
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Median Household Income

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<tr>
<td>$30,000</td>
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Race and Ethnicity

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<td>WHITE</td>
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</tr>
<tr>
<td>HISPANIC</td>
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<tr>
<td>BLACK</td>
<td>323</td>
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<tr>
<td>ASIAN</td>
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</table>

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Local Area Race and Ethnicity

<table>
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<tr>
<th>Zip Code</th>
<th>Expected Number of Medicaid Patients</th>
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<tbody>
<tr>
<td>LOCATED IN MAJORITY NON-WHITE ZIP CODE</td>
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</tr>
<tr>
<td>LOCATED IN MAJORITY WHITE ZIP CODE</td>
<td>176</td>
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Rural-Urban

<table>
<thead>
<tr>
<th>Rural</th>
<th>Expected Number of Medicaid Patients</th>
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<tbody>
<tr>
<td>RURAL DENTIST</td>
<td>362</td>
</tr>
<tr>
<td>NON-RURAL DENTIST</td>
<td>229</td>
</tr>
</tbody>
</table>
Interaction of the Community and Provider

Impact of a Dentist Locating in a Majority Non-White Zip Code by Race and Ethnicity

![Bar chart showing the impact of a dentist locating in a majority non-white zip code by race and ethnicity. The chart includes bars for Non-Hispanic Asian (152), Non-Hispanic Black (140), Hispanic (141), Non-Hispanic White (97), and Non-Hispanic Other Race (113).]
Key Findings

- High volume Medicaid dentists are less likely to be White, more likely to locate in a non-White, rural, or high-poverty area, work in large group practice, and be affiliated with an FQHC. This is consistent with medical care provider research.

- Racial and ethnic differences in Medicaid participation are not accounted for simply by where dentists locate. Controlling for the demographic make up of the neighborhood, White dentists are still less likely to participate in Medicaid than non-White dentists.

- Practice modality matters. Larger group practices are more likely to participate in Medicaid.

- Promoting growth within the segments of the dentist workforce that treat more Medicaid patients—dentists who are Black, Hispanic, or Asian, those that locate in rural areas—could create a more robust dental care safety net for low-income populations.
Thank You!

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